

# Who wants to be the

2004 INDYCAR® SERIES DRIVERS COMPETING ON FIRESTONE RACING TIRES

- 1) SCOTT DIXON \* TRRGET CHIP GANASSI RACING
- 2) GIL DE FERRAN \* RETIRED
- 3) HELIO CASTRONEVES \* MARLBORD TEAM PENSKE
- 4) SAM HORNISH JR. \* MARLBORD TEAM PENSKE
- 5) TOMRS SCHECKTER \* PANTHER RACING
- 6) GREG RAY \* ACCESS MOTORSPORTS
- 7) DARREN MANNING \* TARGET CHIP GANASSI RACING
- 8) BRYAN HERTA \* ANDRETTI GREEN RACING
- 9) MARK TAYLOR \* PANTHER RACING
- 10) TORR TRKRGI \* MO NUNN RACING.
- 11) DARIO FRANCHITTI \* ANDRETTI GREEN RACING
- 12) TONY KANAAN \* ANDRETTI GREEN RACING
- 13) SCOTT SHARP \* KELLEY RACING
- 14) ED CARPENTER \* RED BULL CHEEVER RACING
- 15) BUDDY RICE \* TERM RAHAL
- 16) DAN WHELDON . ANDRETTI GREEN RACING
- 17) A.J. FOYT IV . A.J. FOYT ENTERPRISES
- 18) ROBBIE BUHL \* DREYER & REINBOLD RACING
- 19) KOSUKE MATSUURA \* SUPER AGURI FERNANDEZ RACING
- 20) ALEX BARRON \* RED BULL CHEEVER RACING

Catch all the track action starting Sunday, February 29 at Homestead-Miami Speedway, airing 2 p.m. ET on ESPN.















#### TRACK

Homestead-Miami Speedway	February 29	ESPN	ESPN 2
Phoenix International Raceway	March 20 March 21	ABC	ESPN 2
Twin Ring Motegi	April 17	ESPN 2	
Indianapolis Motor Speedway	May 22 May 30	ABC	ESPN 2
Texas Motor Speedway	June 12*	ESPN	
Richmond International Raceway	June 26*	ESPN2	
Kansas Speedway	July 4	ABC	ESPN 2
Nashville Superspeedway	July 17	ESPN	ESPN 2
The Milwaukee Mile	July 25	ABC	ESPN 2
Michigan International Speedway	August 1	ABC	ESPN 2
Kentucky Speedway	August 14 August 15	ABC	ESPN 2
Pikes Peak International Raceway	August 22	ABC	ESPN 2
Nazareth Speedway	August 29	ABC	
Chicagoland Speedway	September 11 September 12	• ABC	ESPN 2
California Speedway	October 2 October 3	ESPN	ESPN 2
Texas Motor Speedway	October 16 October 17	ABC	ESPN 2

Please check your local TV listings for the exact times and dates. Schedule is subject to change.

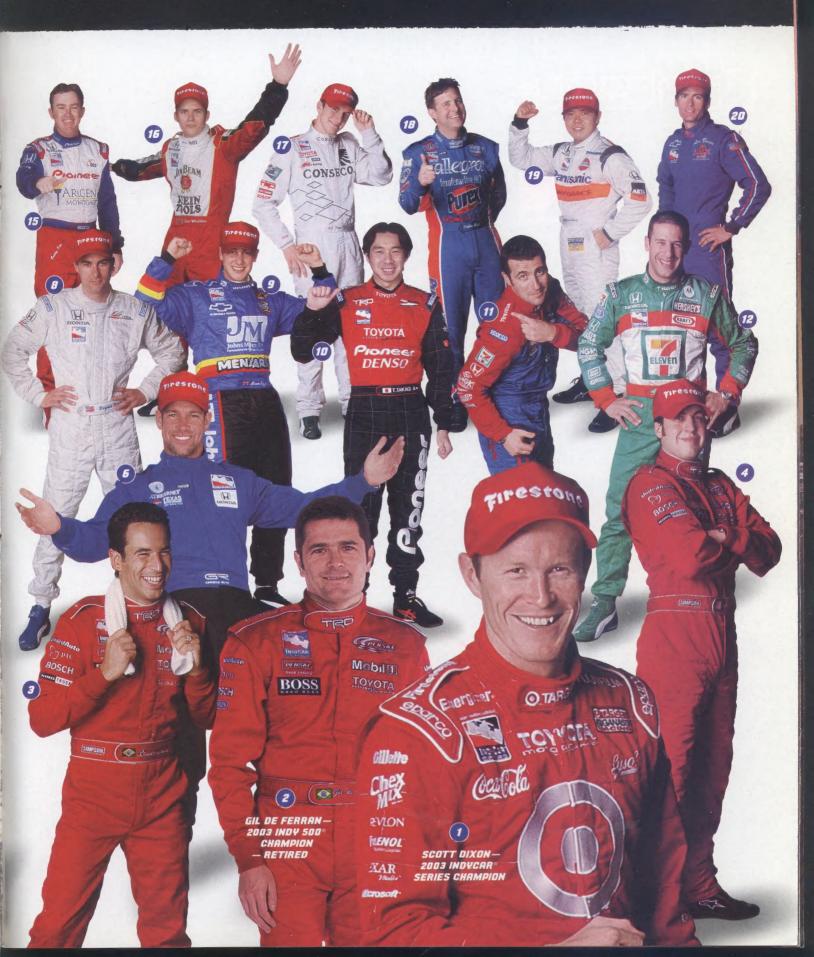
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# next number one?



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Tony Kanaan, a man who likes Coldplay and loves cycling





## INSTANT PAIMER

IF YOU'RE NEW TO THE IRL INDYCAR SERIES, HERE ARE A FEW POINTERS TO WHAT IT'S ALL ABOUT. IT'S FAST, CLOSE AND COLORFUL – AND WE THINK YOU'LL LOVE IT

Words Laurence Foster Pictures Walt Kuhn/LAT, Gavin Lawrence/LAT



#### WHAT

The IRL IndyCar Series is the fastest, closest open—wheel racing series in the world. The 16-race championship visits oval tracks throughout the USA, plus Motegi in Japan, with the legendary Indianapolis 500 Mile Race as a stunning centerpiece. The best open—wheel racers from the USA, along with a host of international stars race together in a championship renowned for thrilling wheel—to—wheel action and ultra—close finishes. With each race counting for points, that adds up to an exciting season—long battle to become the IRL IndyCar Series champion. Also up for grabs is the Bombardier Rookie of the Year title, awarded to the highest—placed newcomer.

#### WHO

Double IRL IndyCar Series champion Sam Hornish Jr. heads an exciting group of U.S. drivers fighting for the title. The mix of talent sees established open-wheel aces such as Scott Sharp, Alex Barron and Bryan Herta racing alongside young guns like Ed Carpenter and A.J. Foyt IV. International stars include reigning champ Scott Dixon (New Zealand), double Indianapolis 500 winner Helio Castroneves (Brazil), Dario Franchitti (Scotland) and 2003 Bombardier Rookie of the Year Dan Wheldon (England), (See page 20.)

#### WHERE

The series crisscrosses the USA through an eight-month season that starts at Florida's Homestead-Miami Speedway in late February and ends at the Texas Motor Speedway in October. Races are held in 14 states and in Japan, with Texas the only venue hosting the series twice during the season. Three races – the first visit to Texas, Richmond and Nashville – are run in the evening under floodlights.

#### THE CARS

Cars in the IRL IndyCar Series must comply with regulations designed to maximize safety, equalize performance and minimize cost. They weigh a minimum of 1525lbs., have a length in excess of 192 inches (wheelbase of 120 inches), a height of 38 inches and a width between 77.5 and 78.5 inches. Engines are methanol-fueled. normally aspirated, 3.5-liter V8s (reducing to 3 liters for the Indy 500 onward, see page 10), and produce in excess of 600bhp. Aerodynamics are strictly controlled, with different front and rear wing packages for superspeedways and short ovals. All cars run on Firestone Firehawk tires and use a 6speed, sequential-shift gearbox. Chassis are built by Dallara or G Force, with engines supplied by Honda, Toyota and Chevrolet.

The IndyCar Series' rules are designed to provide close, fast racing. It's a formula that works well

#### THE TRACKS

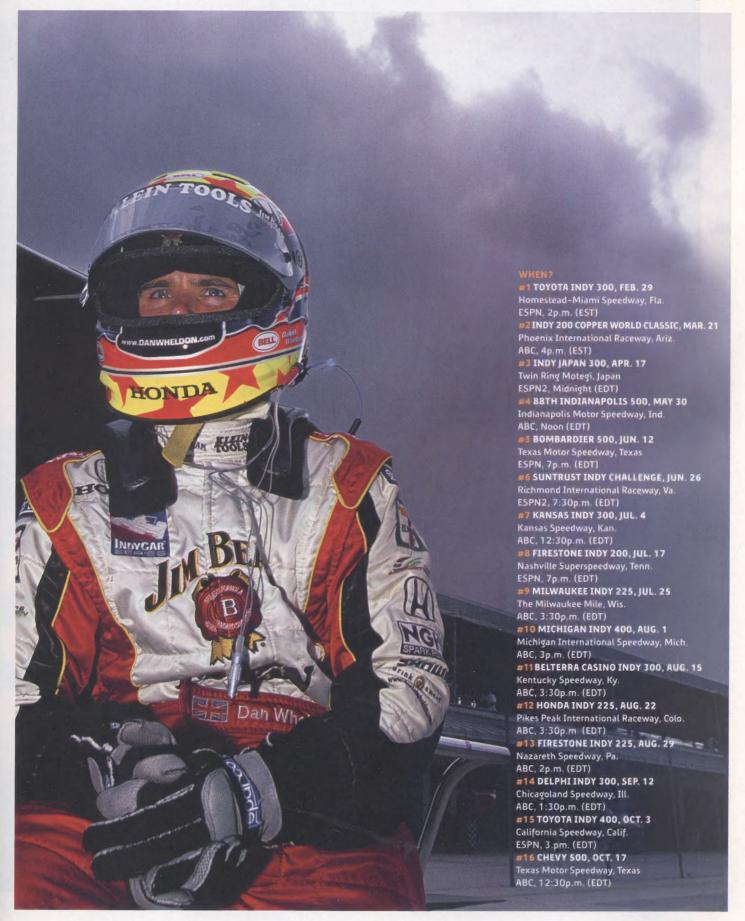
All tracks raced on are counter-clockwise ovals with banked corners. The angle of banking varies from just 2.5 degrees at the Milwaukee Mile to 24 degrees at Texas. The shortest and slowest track is Richmond's 0.75-mile tri-oval (IRL pole record is 168.705mph); the longest and fastest is the 2.5-mile Indianapolis Motor Speedway (IRL pole record is 233.718mph). (See page 52.)

#### THE RACES

Races range from 187.5 to 500 miles. Starting order is determined by single-car qualifying speed. Races use a rolling start. For safety reasons, the IndyCar Series does not qualify or race in the wet. If a caution is called, the cars continue behind a pace car, with the laps counting for total race distance. Fuel capacity of a car is 30 U.S. gallons, so cars pit for fuel approximately every 60 miles. (See page 40.)

#### THE POINTS

The race winner gets 50 points. Points then descend in order 2nd=40; 3rd=35; 4th=32; 5th=30; 6th=28; 7th=26; 8th=24; 9th=22; 10th=20, then decrease by one point to 18th. 19th to 24th get 12 points, and 25th to 33rd get 10. The driver leading most laps takes three bonus points. The champ is the driver with the highest total from all 16 races. ■



WHAT ARE YOU SMILING AT?



# REVOLUTION



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## What's new...

## Engines power safety drive

THE IRL INDYCAR SERIES IS REDUCING ENGINE CAPACITY TO ENHANCE SAFETY

THE PACE of development in motorsports never slows. And that applies not only to the teams, manufacturers and drivers, but also the rulemakers. The Indy Racing League is constantly monitoring the speed, safety, competitiveness and cost of the racing in the IndyCar Series. For 2004, it brings in changes to enhance safety and reduce costs, while maintaining the high level of competition.

The biggest alteration to the technical rules is the reduction of engine capacity from 3.5-liters down to 3.0-liters as part of a package of speed restrictions. The IRL has worked in tandem with its engine manufacturers. Toyota, Honda and Chevrolet, in formulating a change which will come into effect for the Indianapolis 500 in May. The cars are expected to lose up to 100bhp, thereby helping to keep speeds in check.

The IRL's senior vice president of racing operations, Brian Barnhart, says: "We have been gathering data and studying ways to slow the cars down without compromising the highly competitive racing we have in the

IndyCar Series. We believe these changes will accomplish that goal." The manufacturers, teams and drivers alike

The manufacturers, teams and drivers alike have welcomed the change. "We have to control speeds and this is the best way." says Lee White, the Toyota Racing Development general manager.

For the three races before the Indianapolis

For the three races before the Indianapolis 500, the cars retain their 3.5-liter units, but run with a 12-inch by 3-inch hole cut into the airbox. This temporary measure reduces positive airflow to the engine, thereby acting as a limiter on power output.

The IRL has also mandated two

The IRL has also mandated two aerodynamic changes which will reduce speeds. Firstly, cars this year will run with road-course style sidepod radiators – included in preparation for road course events in 2005 – which have the side effect of increasing drag on oval tracks. Secondly, a vertical wicker (a small tab) will be fitted on the rear-wing at tracks between one and two miles in length. That will also decrease aerodynamic efficiency and therefore reduce speeds.

#### Cost reductions

#### ■ Testing

All private testing is now banned, and non-race running is limited to the IRL's official open tests. These are scheduled for Indy and Milwaukee after the season has started. Beyond this, each engine maker is allocated three days of testing for its full-time teams.

#### Engine change:

On two-day race weekends, the same engine must be used for practice, MBNA Pole Qualifying and the race. If a change has to be made, the car will have to start the race from the rear of the field. At three-day race meetings, an engine change is permitted before qualifying begins.

"WE'VE BEEN STUDYING WAYS TO SLOW THE CRAS WITHOUT COMPROMISING THE ARCING. WE BELIEVE WE'VE ACCOMPLISHED THAT GOAL"

BRIAN BRANHART







As every race car driver knows, never read a whole lot into testing times. But here goes anyway... Reigning IndyCar Series champ Scott Dixon can add the unofficial title of "King of Spring Training" to his roll of honor. The Target Chip Ganassi Racing star topped the accumulated time sheets after four days of pre-season testing at Homestead-Miami Speedway on Jan. 28-29 and Phoenix International Raceway on Feb. 11-12. Marlboro Team Penske's Helio Castroneves was second, with Andretti Green Racing's Tony Kanaan third. The final order came from adding each driver's position on the final speed chart each day; the lower the total score, the better. It may be a pointer to form, but as Castroneves explains, testing is a time for experimenting. "We try a lot of things to make sure that on a race weekend, the changes we make will be the right ones." Between them, the IRL stars ran a total of 5062 laps at Homestead and 5038 at Phoenix. That's a staggering 12,631 miles of testing!

#### Who's new...

THERE MAY BE NO RACING DURING WINTER, BUT EVERY ONE OF THE 12 INDYCAR SERIES TEAMS HAS BEEN BUSY



#### MARLBORO TEAM PENSKE

NO DOUBT Penske pulled off the biggest off-season driver change by signing up double IndyCar Series champ Sam Hornish Jr. to replace the retiring Gil de Ferran. Continuity is provided by Brazilian Helio Castroneves. The Marlboro and Penske collaboration continues into its 16th year, while Sirius Satellite Radio is added to the associate sponsor roster.



#### KELLEY

FOUNDER Tom Kelley welcomed aboard III new shareholder to the team in December, with Texas businessman Rick Weidinger becoming a co-owner. On track, Scott Sharp continues into his seventh year with Kelley, while Sarah Fisher has signed to drive the team's second Dallara-Toyota in IIII program of events that will include the Indy 500.



#### MO NUNN

JAPANESE ace Tora Takagi returns for his second manum in the IRL IndyCar Series with Mo Nunn Racing, which slims down to one car to focus all efforts on the #12 Pioneer machine. Having tried out a Dallara chassis on occasion last year, Takagi has opted to mate his Toyota engine with the Italian chassis full-time for 2004.



#### DREYER & REINBOLD RACING

TEAM co-owner Robbie
Buhl is back in the hot
seat as the Indianapolisbased team enters its fifth
full season in the IndyCar
Series. The tight-knit
outfit will start the season
trimmed back to one car,
but Buhl enjoys the
continued association
with sponsors Purex and
Dial for his Dallara. V8
power comes again
courtesy of Chevrolet.



#### TEAM

YOUNG American Buddy Rice is the man chosen to fill the seat of Swede Kenny Brack, who is recovering well from injuries he sustained in last year's Texas season finale. Argent joins Pioneer as a headline sponsor, while there's a switch from Dallara to G Force chassis. Rahal will also run a carfor Roger Yasukawa at Motegi and the Indy 500.



#### SUPER AGURI FERNANDEZ RACING

THE collaboration
between former grand
prix driver Aguri Suzuki
and Mexican Adrian
Fernandez continues into
a second year. Off-season
changes include a new
driver, with Japanese
rookie Kosuke Matsuura
taking the controls after
three years of racing in
Europe. There's II switch
to G Force chassis to
partner its Honda V8s.



#### RED BULL CHEEVER RACING

FORMER Indy 500
winner Eddie Cheever has
expanded his Red Bullbacked team to a two-car
attack for 2004, with
rookie contender Ed
Carpenter filling the
second Dallara-Chevrolet.
IndyCar Series race
winner Alex Barron lands
a deserved full-time ride
in the other car, while
Cheever also expects to
run a third car at Indy.



#### PANTHER RACING

EXPANSION was the team's main aim this winter, and it's succeeded by taking on former IRL team owner John Menard a partner. This has resulted in a second Panther car, run with sponsorship from Menards, for rookie Mark Taylor. The big change in the Pennzoil car is Tomas Scheckter's arrival, filling Sam Hornish Jr.'s shoes.



#### A.J. FOYT ENTERPRISES

THE GREAT Texan's team has never missed an IRL IndyCar Series race, and isn't about to start now! So A.J. returns with a car for his grandson, A.J. Foyt IV, who is now moving into his second IRL season. Toyota will again provide engines, but the major change is making the team's mid-2003 switch to Dallara chassis a permanent one.



#### ANDRETTI GREEN

DARIO Franchitti's return to fitness means he has reclaimed his seat in the #27 car (now sponsored by Archipelago's ArcaEx brand), but AGR has kept on the Scot's fill-in Bryan Herta by starting a fourth team. Dan Wheldon and Tony Kanaan == also back - in fact, in October the Brazilian inked a four-year extension to his deal to drive the 7-Eleven car.



#### ACCESS MOTORSPORTS

THE TEAM co-owned by former IndyCar Series champion Greg Ray looks set to return to the series with a full-time program this year. The Texan will once again drive a Hondapowered G Force chassis, a combination he took to 15th overall in the point standings last year. Access shareholders also include team manager Ted Bitting and crew chief Jeff Britton.



#### TARGET CHIP GANASSI RACING

THE major off-season change for last year's title-winning team is the arrival of Briton Darren Manning in the second seat, following the departure of Tomas Scheckter to Panther Racing. Manning joins defending champion Scott Dixon in the squad, which maintains its G Force-Toyota package and Target Stores backing.



Four highly talented rookies will be battling it out in the 2004 IndyCar Series. Ed Carpenter of the USA, Japan's Kosuke Matsuura and British pair Mark Taylor and Darren Manning are the newbies, and all four have the capability and the equipment to pull off some surprises. Manning's experience of oval racing in last year's CART Champ Car series rules him out of the chase for the prestigious Bombardier Rookie of the Year title, but he, like the others, will be eligible for Indy 500 Rookie of the Year honors. "This is ■ fantastic opportunity for us all," says Manning. "We get to measure ourselves against the best open—wheel oval racers in the world, and I'm sure we'll all be capable of posting some great results." Last year's Bombardier Rookie of the Year chase saw Dan Wheldon edging Roger Yasukawa to the title. This season, Wheldon will be chasing wins with Andretti Green Racing. "Guys like Dan and Roger have set a standard for us," says Manning. "Now we've got to deliver, too."



For all the latest from the IAL IndyCar Socies check out www.imigracing com

THOSE THAT I'VE WON THE PHRASES SUCH AS
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COMPLACENCY', BUT I
DON'T THINK LIKE THAT."
SCOTT DIXE rending L

# A U L U S

WHAT IS IT ABOUT THE GREAT CHAMPIONS THAT DRIVES THEM ON TO SUCCESS AFTER SUCCESS? A STUDY OF REIGNING IRL INDYCAR SERIES TITLE HOLDER SCOTT DIXON PROVIDES SOME ANSWERS

rofessional sport the world over is full of people blessed with talent. But among them are those who always stand out from the crowd, who have that something extra: Tiger Woods; Pete Sampras; Michael Jordan. Somehow, they possess an intangible but definite quality that makes an athlete a champion. So how do you define what makes them that much better, year after year?

When it comes to auto racing, the matrix of qualities required to emerge ahead of the pack is perhaps the most complex of *all* sports. It's a multi-part formula that many believe has been solved by Scott Dixon, the New Zealander who won the IRL IndyCar Series crown last year at his first attempt. For those at Target Chip Ganassi Racing, as well as most other observers in the IndyCar garage, the man Dixon ticks the same boxes that have defined many motorsport greats.

And don't expect the 2004 version to be any less complete. "Now I've won the title, people use phrases such as 'added pressure' and 'complacency'," says Dixon with wry smile. "But I really don't think like that. I go to each race to win. And if I succeed, it's the best way to win another title."

The ease with which the 23-year-old shrugs off suggestions of being blunted by success is indicative of the very reasons he achieved his new-found status in the first place. All the drivers on the IRL grid were born with a special gift – an aptitude – that allows them to race wheel to wheel at 220mph. But there are essential elements beyond innate ability that combine to produce the great drivers. How is it that Dixon has that something extra?

Perversely, to explain a driver's success you first have to look beyond the human factor. Participants in auto racing are reliant to a huge extent on the capabilities of the car they race. Four-time Indianapolis 500 winner Rick Mears puts it in perspective: "There are a lot of drivers out there who have talent, but it takes a lot more than that. I don't care who you are, if you don't have the right tools, you can't get the job done. A driver must have the right equipment."

By joining Ganassi's operation in 2002, Dixon made a fine choice. It won four consecutive CART titles in the 1990s, along with an Indianapolis 500 triumph in 2000. The G Force–Toyotas it provides for Dixon are as well prepared as anything in the IndyCar Series.

But what makes that really count is that Dixon has succeeded in the crucial task of unifying his and Ganassi's qualities by galvanizing the team around him. "A champion understands the value of



surrounding himself with II unified team, and he knows how to become enmeshed within that unit," explains Ganassi managing director Mike Hull. "In Scott's case, he's just a regular guy. He has no degree of arrogance about him. That's why it's so great to work with him.

"Scott understands all the strengths and weaknesses of the crew around him. He does not find fault in the weaknesses, and he builds the strengths. A true champion will also work as hard every day as every team member to achieve their common goal."

This importance of application is common to all sports. Turning talent into results requires sheer hard work. In auto racing, beyond the romantic notions of natural speed and awesome car control, lies the reality of everyday labor. It requires I willingness to build toward success, sometimes for years without reward. Drivers must live through a strict regime, constantly striving to improve themselves. It's about dedication, and a willingness to learn.

Hull has watched all of Ganassi's champions at work. "I think the very best drivers study," he says of his observations. "They study themselves, on and off the track. They study their teammate. They try to learn by observing what rivals are doing. They never accept at face

value what they are told about the limits. Each time they come back to a corner, they're thinking about how to be better that lap."

Mears: "Focus is essential. You can have a lot of ability, but if you don't have the dedication to spend the time it takes to do things properly, you won't succeed. And to win championships you need to be consistent. That takes a lot of focus and mental and physical training."

In this area, Dixon is unsurpassed among his peers. He possesses that magic formula of a huge talent combined with an uncompromising work ethic. His single—minded mission to become the best driver out there began when he was so young that he knows nothing else.

"I believe that being absolutely ready is the most important aspect," says Dixon. "There are a lot of guys who just jump in and try to achieve success right away. In oval racing, especially, you can't get frustrated. You need to be very calm and level-headed."

Preparation and talent alone only take you so far, however. Another facet to many great drivers is sheer intellect. Firstly, having brains usually translates into a sound grasp of the engineering principles behind their race car.

U.S. racing legend Michael Andretti, now an IRL team co-owner, says that the realization of

Number one man: Dixon's ability to gel with the Ganassi team means they all pull in and direction – making the 2004 G Force-Toyota win this fact is vital. "Part of being a smart driver is realizing that you can only drive so fast," he explains. "The rest has to come from the car. Therefore it's key to make the car work for you."

The IndyCar Series' oval racing places a premium on drivers correctly identifying set-up changes that are required – even during a race. They might have great handling car at the start, but the winner will be someone who can evolve their set-up through whole race afternoon to respond to altering conditions, such as wind speed or track temperature.

Mears places a premium on a sound grasp of engineering. "Certainly a major factor in a driver emerging at the top is understanding a chassis, how a car works. A lot of people can drive a car. But if there's someone who can drive it, understand it, and therefore point their engineers in the right direction to make the right changes at the right time, they'll gain a huge advantage."

Dixon has demonstrated an innate understanding and sensitivity toward his G Force-Toyota package. "Scott is able to mentally grasp exactly what he needs for race day," explains Hull. "He knows what he needs on a light load of fuel, and how to prioritize with his race engineer exactly what he needs first."

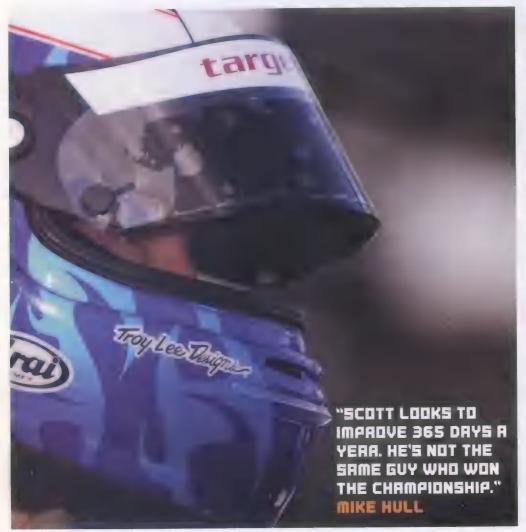
Superior mental capacity also allows the

PUT YOURSELF AT THE TOP OF THE TO-DO LIST. THE ALL-NEW 2004 SOLARA. Clean out garage. Koha + DVD's. File tax return extension ugain. Duy new Solara SE Sport with a 225 norsephwer VV - V6 engine, sport-luned suspension and a Deluxe CD player. And not nacessarily in that order.

GET THE FEELING







mind to make use of all information given to it – process it and, if it's useful, store it. It's a seemingly robotic process, ruthless and efficient, but often a common denominator among the greats. A spin-off of this process is that champions very rarely make I mistake twice, and are constantly evolving as drivers.

"Scott looks for ways to improve, 365 days a year," attests Hull. "Taking that into account, the man you see now is not the same guy who came to Ganassi in 2002. He's not even the same guy who won the championship in Texas last fall. He's beyond that now."

The obsession with always improving, never being satisfied with their level, is what turns title winner into multiple champion – why a Woods or Sampras just keeps on winning. And what that requires, aligned to an unswerving competitive instinct, is a passion for what they're doing.

"A key factor is loving what you do. For me, racing was my hobby," says Mears of his career, which ended in 1992. "It didn't matter if I won one or 10 races – I went into the next one with the same attitude, because I just loved what I did. If someone's not in it for that reason, then it's hard to keep the required focus."

The multiple champion driver mentally wipes the slate clean for each season, or even

for each race. Sam Hornish Jr. won back-to-back IndyCar titles in 2001-'02 with Panther Racing, but he is another whose thirst for success is never quenched.

"Once you've won a title you know you can do it. But can you do it again?" says Marlboro Team Penske's new signing. "That's how I always look at it. Any good sportsman has that attitude. They don't reflect back on what they've done, they focus on what they can achieve in the future."

What it comes down to is relishing the challenge of personal achievement over and over, never tiring of striving to excel. In this rarified pysche there is no time for basking in the glories of past triumphs, because their mentality has already propelled them on to the next challenge. Dixon falls into this bracket.

"I enjoy and love what I do," he says. "I'm always thinking about it – even before I go to bed. For me, it's my life."

Drivers like Dixon find it hard to explain where their desire comes from. That's because, like their talent and intellect, it's inherent within them; something they're born with. Dixon can't see or feel it; that's why it's for us, the outsiders, to recognize the traits of a great champion. He's too busy working on winning this year's title.

It's all in the eyes: Dixon possesses a dedication that is unsurpassed on the IndyCar grid. It is a mentality that will keep being rewarded



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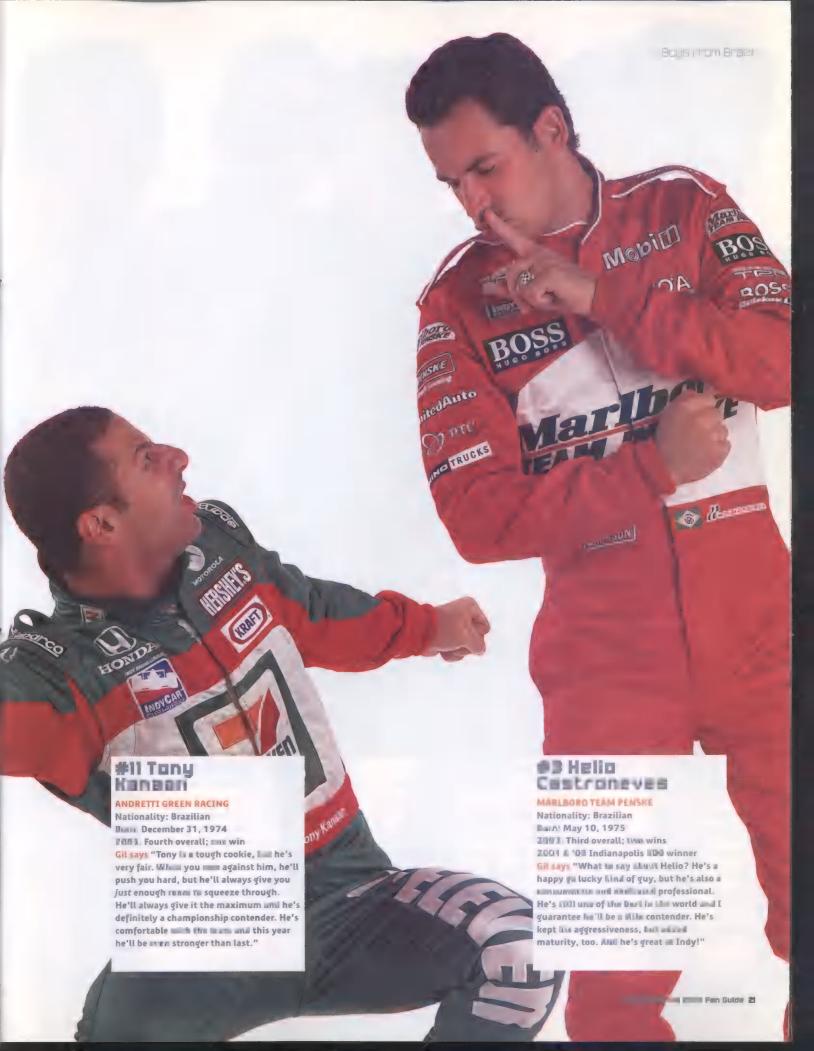




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IN 2003, GIL DE FERRAN WAS RACING WHEEL TO WHEEL WITH THE STARS OF THE IRL INDYCAR SERIES. NOW, AFTER QUITTING AT THE VERY TOP OF HIS GAME, THE REIGNING INDY 500 CHAMPION CASTS HIS EXPERT EYE OVER THE CLASS OF 2004. "THE STRENGTH IN DEPTH OF THE FIELD IS FANTASTIC," HE SAYS, "SO IT'S A HARD ONE TO CALL. THERE ARE FIVE GUYS WITH A REALLY SERIOUS SHOT AT THE TITLE – HELIO CASTRONEVES, SAM HORNISH, SCOTT DIXON, DARIO FRANCHITTI AND TONY KANAAN – BUT DON'T RULE OUT GUYS SUCH AS TOMAS SCHECKTER, EITHER. IN FACT, DON'T RULE OUT A SURPRISE. PERIOD."





#### orn in the USA DELPHI fexofena dine HCl Robbie Buhl Scott Sharp Gabriel® #8 Scott #24 Robbie Buhl Shacp KELLEY RACING DREYER & REINBOLD RACING Nationality: USA Nationality: Born: February 14, 1948 Born: September 2, TREE 2001 Eighth overall; 2001: 1ath overall; four top 10s Gil says "Bullilin has struggled a little Gil says "At times, he's been extremely bit to find the same form as I saw competitive, had the a have been a few men I rused against him in the 1001 changes within MI LEAR mer las winter, Indianapolis 100. It's a difficult una lu including scaling down to just one car, so Hute are a few and the you try call but aut of the variables involved, has he's a committed hind of racer, a rule fild chances. As a resear, he teres very hand and he's very brave - these are the limit trier und a good guy. I'd like to ree two things that really shand out." him do well." Fan Sulde 23



#### TEAM RAHAL

Nationality: U.A Boxm: January 31, 1976 2003: 10th overall; four top 12s Gil says "He mad a difficult time last year, so a thange of sout will be good for him. Old, he's mot confirmed for fire and the he'll feel wanted at Team Ballal. He's a good racer and dassesses a break, so he's just out to forget about what might en might aut happen ment and go for results. Things will sait themselves out."

#### RED BULL CHEEVER RACING

Nationality: USA

Born: November 6, 1970 EDDE: 17th overall; una win

Gil says "Alex should be a real contender for rame wins now that he's in a stable situation and knows he's running the full sussum. He's the kind of driver who really benefits from that. He's got proven speed and I know the guys at Penake were happy with him when he simed in for me at Motegi last year."

### #14 A.J. Fayt IV

#### A.J. FOYT ENTERPRISES

Nationality: UIM

Born: May 25, 1 114

2001 21st overall - rookie season

Git says "He had a steep learning curve last manne, but taking the winter off and reflecting am things and have benefited Lim greatly and built his confidence levels | up. | up. | mentally stronger and he's got that year of experience of the tracks and the team, so things can build from here."





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Nationality: Enthals
Born: December 16, 1977

ENTH Menards Infiniti Pro Series champ
FORT Enable of the Year contender
GRapys "Mark's father owned my Formula
Formula Lean when I raced in England, so I
always cheered for him and well in
Infiniti Pro. He'll find this a little tougher,
but he's a quality driver in a quality limin
And his knows a lat of the tracks, and I'll tip
him as the surprise package of any year."





# It's like at 200 at 200

Racing is a thinking man's sport. Finishes are often decided by quick in-race strategy or an all-night work session in the garage. From our drivers to our engineers, IQ is more important than mph. We're more interested in testing minds than machines. Our race program develops our engineers, teaches them how to innovate and how to do things quickly and efficiently. In short, how to think like a Honda engineer. So, when we win a race, it's proof our thinking also surpassed the competition.

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JIM BEAM FIREHAWK

7-ELEVEN

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# Scott Dixon

MENET L IP GANASSI RACING YOYSYA

Car Crew chief Davi-Train owner

Gana







#2 Mark Taylor PANTHER RACING

Car Crew chief All Shipson

Team LANCES HAVE NO St. Berry S. Parlier 







#### #3 Helio Castroneves MARLBORO LAM MENSKE VERVINIA

Car AUL-18/414 Crew chief Con Trans







#### #4 Tomas Scheckter

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Car Crew chief

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# OF SPEED



#6 Sam Hornish Jr.

MARLHORD TEAM PENSKE YOVOYA

Car fielded - levela Crew chief Math Jorsson Team www.

Raym Fenske







#7 Bryan Herta

Car Cattara Honda Crew chief Jeff Grahm

Team owns to Michael Androtti Kim Limon, Keylin Javaree







#8 Scott Sharp

KELLEY RACING TOYOTA

Car Dallara-Toyota Crew chief john Worth Team unusura

Tom Kelley







#10 Darren Manning

TARGET CHIP GAMASSI RACING TOYOTA

Car 6 Force-Toyota Crew chief Dave Higuera Team c











#II Tony Kanaan ANDRETTI GREEN RACING (#)

Car Dallara-Honda Crew chief Jeff Simon Team www.5 Michael Andretti.







Kim Green, Kevin Savoree

#12 Tora Takagi MD NUNN RACING TOYOTA







#14 A.J. Foyt IV

Car Dallara-Toyota Crew chief Bill Spencer Tram sweer







A.J. Foyt

#15 BUDDY RICE

Car G force Honda Crew chief Ricardo Nault Team owners Bobby Rahal, David Letterm an







#24 Robbie Buhl
DREYER & REINBOLD RACING

Car Dallara-Chevrolet Crew chief Brian Franzosi Team owners Dennis Reinhold, Robbie Buhl







#25 Dan Wheldon

Car Crew chief

Tann owners making a service for boyest force haven







#27 Decia Franchitti

ANDRETTI GIVEEN RAY, ING (M)

Car Crew chief Tame a same a







Verit booms

#51 Riex Barron

Car Crew chief Team







#52 Ed Carpenter

Car Crew chief Team







#55 Kosuke Matsuura

Car Crew chief

being ferunder





PANCHO 36 IndyCa Series 2004 Fan Guide

Words Pigues 1991

# Friends in high places

WHEN TOMAS SCHECKTER'S BLASTING AROUND THE TRACK AT 200-PLUS, SOMEBODY'S LOOKING OUT FOR HIM FROM ON HIGH-HIS SPOTTER PANCHO CARTER





ay up high on the grandstand roof, hundreds of feet above the straightaway. Pancho Carter has the best seat in the house. But don't waste your breath asking him what happened in the race because the former Indy 500 polewinner has eyes for just one man – Tomas Scheckter.

As a spotter for Panther Racing, Carter is the eyes and ears for his driver, talking him through traffic and watching for yellows as the 200mph chess game unfolds. From pace lap to checkered flag, Carter charts Scheckter's course with an intensity that leaves no time to admire the view.

"Yeah, I've got III great place to watch from," smiles Carter, "but when your guy's in a heated battle, you don't have a clue what is happening in the race overall. Afterward somebody might come up to me and say, 'man, that was a heck of a race', and I'll say, 'I guess it was, because I was real busy'. In fact, first thing I'll usually ask about when I call home is how the race went."

Spotters became an integral part of IndyCar racing in the early 1990s. Teams had dabbled with them as a second pair of eyes at the bigger tracks such as Indy, putting a man with a radio in a stand or suite at the far side of the track. But it was improvements in car safety that led to spotters becoming *de rigeur*, with higher cockpit sides and bigger head restraints cutting down a driver's peripheral vision.

"When I raced in this type of car in the '70s and '80s, your head stuck out a lot more," says Carter, "so we sensed a lot better where the other guys around us were. Nowadays, with the cars the way they are, a spotter is crucial

and teams are realizing that it works even better if it's an ex-driver. We've got pretty much the same mindset as the driver, so we can put ourselves in his position and give him the information we know he'd want."

Knowing what to say, and when to say it, is a skill Carter honed winning back-to-back IndyCar Series titles with Sam Hornish Jr. in 2001-'02. Scheckter fills the boots of the Penske-bound Sam this year, but Carter says his new guy has similar needs. The amount of talk varies, but the trick is not to load your driver with stuff he doesn't need or can't use.

The frenetic stuff starts when he's battling for position, with the spotter calling the relative positions of the cars and ensuring the pass is complete before his driver moves back into line – a human radar, if you like.

"Sometimes you'll go to places like Texas and they'll be running side by side for lap after lap," says Carter. "A couple of years ago, Sam and Helio Castroneves were like that for 27 laps and all the time I was calling 'inside' or 'outside' or 'still there'. I probably said 'still there' two hundred times in the space of 27 laps."

With ultra-close finishes an IndyCar Series trademark, spotters also play an important role in the final laps, building up their driver's knowledge bank as he plots his last lap move.

" I'll be telling my driver 'you had him by six inches', or 'he had you by a foot'," explains Carter. "You're reinforcing his peripheral feel. Basically, you're giving him the info he needs to win that race – simple as that. At Chicago last year, when Sam won by a few inches but

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still put his hand in the air when he crossed the line, that's because we'd used the laps before to build up a visual reference of what it looked like to be slightly ahead or slightly behind."

Cautions are a big part of oval racing and spotters must react instantly. Carter tunes into race control (one of six inputs in his headset), but also reacts to other spotters' body language.

"If I'm watching my guy through Turn Two but the incident's in Turn Four, I'll often see somebody react or turn their head with my peripheral vision. When a yellow's called, you jump on that radio, because if the car in front checks up and yours doesn't, you could have a problem. I'll call, 'yellow, yellow, yellow' and let him know more specifics as I get them."

As an IndyCar travels the length of a football field every second, there's no room for misunderstandings in the exchanges.

"You keep it simple and you avoid words that sound alike," says Carter. "For example, I use 'inside' and 'outside', not 'high' and 'low', because 'low' sounds like 'go' or 'no'. I'll also shorten names, like 'Castro' for Castroneves.

"Most of all, I make sure I don't use any word that sounds like 'yellow' because the last thing you want is your driver mishearing a caution. It's a word you get so attuned to that your reaction becomes instinctive. It even gets to a point that when I'm away from the track I still tense up when I hear someone say it..."

But being so tuned in and dedicated is only good news for Scheckter and his fellow drivers. When you're wheel to wheel at 200-plus, it's always good to have friends in high places.

## Chevy Indy V-8 Insights

WITH THE SOLL OF A CHAMPION AND THE HEART OF INTROCUGHTED THE CHEVY INDY VIB ENGINE CONTINUES CHEVROLET'S WINNING TRADITION IN OPEN-WHILL OF MPETITION

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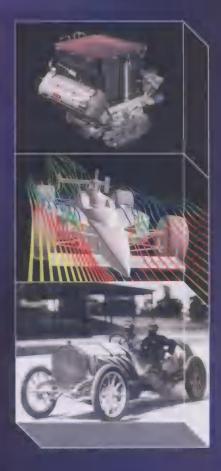
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Words Tim Pictures Gavin Land Michael Lyn / M









#### I BRIAN FRANZOST DESCRIPTIONS CHE

"It's my job m hail Robbie by standing in the pit lane. When he's me I kneel down in he knows where to stop his right-front tire. Once I've changed my wheel, I keep mus eye we the pit lane and on the refueler m I am tell Robbie to go. As chief mechanic, I also sit down after races with the team manager m study videos of all mr stops and evaluate the we need to work on."



#### 2 GARY FROST COLUMN SEASON

"In my position, I have to start by the pit wall and run around to my wheel car pulls in. So I'm always playing catch up ms the other tire changers - I have to accept that I'll be last, and just do my job. I lay the old wheel flat m the ground at it doesn't get in the other cars' way - and ignore the car behind me. If it's going m hit me, it will whether I worry about it m not!"



#### 3 WAYNE SELMAN PLANTER B

"The key for men is to engage the nozzle before the car stops. It clicks in pretty easily, but you need to be totally square-on. It's all about practice. They have recently angled the fuel cells higher, it helps to be tall well strong. The nozzle weighs 40lbs., but was all work out with a team trainer. Fire is a factor. I've had my eyebrows singed before, but it's basically very safe."



#### 4 PHIL DAVIS ald act/Vier

"My priority is to get the airjack in so the tire guys can get started, but I try to get the vent probe in simultaneously. then watch the tire guys, and when they are finished I drop the car. I've also got a butterfly valve an the vent, and sees as fuel hits the glass it's my cue to pull out the vent probe. We all love it. We have other jobs, but the pit stop rush is why all do it."



#### S SCOTT MERRYMAN LEFT-WEAR TIRE

"I have a set pre-stop routine. I check that my airgun is going the right way, the airline's where it needs 🛍 be, and I've placed the starter the pit wall. If Robbie should stall, it's my job to get the car refired. When the car approaches, your heart really speeds up. But you've got to be cool. Slow is quick. It's amazing - it takes only 10 seconds, but when it's over you're drenched in sweat."



#### 6 OWEN SNYDER LETY-FROMTVIRE

"When Robbie's coming in I just focus un that wheel nut. He's good at hitting his marks, and if only have in mane foot either way it's mo problem. With practice you build a rhythm for swinging the wheels m and off. The airgun is heavy, but you stab at the wheel; crossthreads are a thing of the past. When my tire is done, I'll then do any front-wing adjustments needed."



#### 7 ROBERT SUHL MINUS

"The racing is so competitive that you can't underestimate how crucial quick pit stops == - especially with the smaller fuel tanks me run this year. I may slow down from 200 to 50mph in the pit road, but I cannot slack off mentally - I have in concentrate and be aggressive. The hardest part is getting the our turned in and squared up for 🕮 guys. To do that I'm on full steering lock!"



### Firestone

### Meeting the challenge

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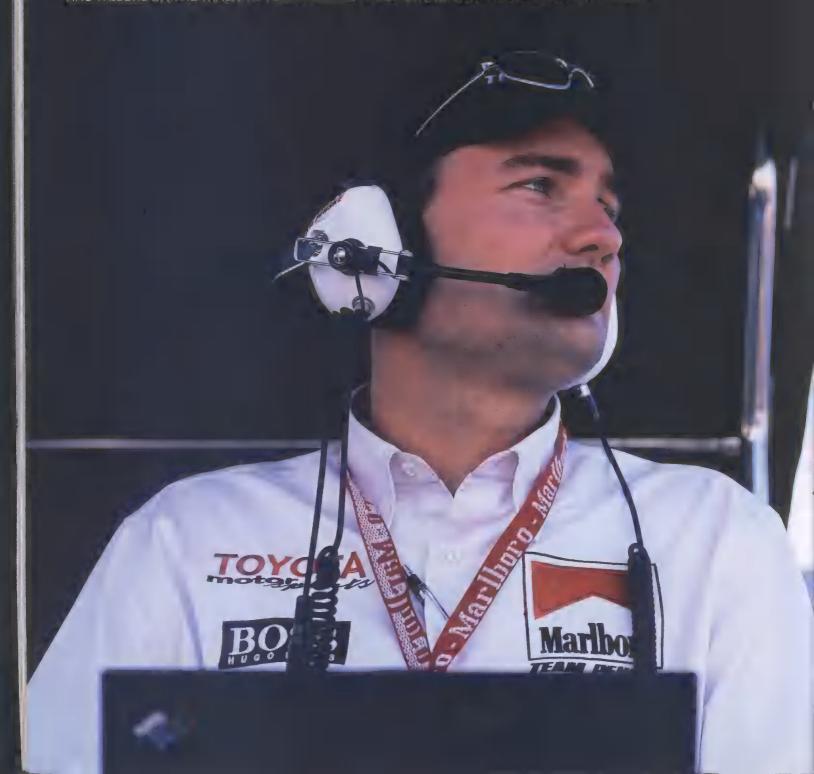
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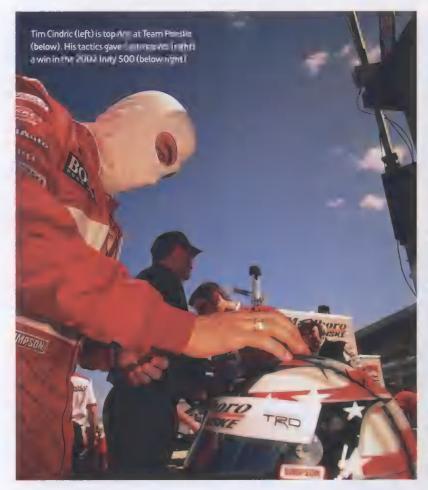
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Words Tim Platter

# CALLING THE SHOTS

AND FAILURE ON THE TRACK AT TEAM PENSKE, THE ST. ALE IS SUCCESSED WITH I M CINDRIC









ehind every great team, there's a great coach - and IndyCar racing is no different. Sure, the drivers you see out on track are the people with the hands-on, split-second control, but there's also someone else calling the shots from the sideline.

That's because races are often decided not simply by the sheer speed and skill of the guy behind the wheel, but also by the strategies thought out behind the pit wall. Choosing the best time to refuel, change tires and alter car set-up is a crucial ingredient for success.

In its president, Tim Cindric, Team Penske has one of the best decision-makers in the business. Cindric chooses gridiron football as the analogy to describe his race-day role as car chief to double Indy 500 winner Helio Castroneves.

"From where I stand, I'm the coach, and the driver's the quarterback," he says. "What I do is react to m play that happens on the track."

To outfox your rivals in the pits can gain half dozen places in a matter of seconds something that can take a driver all afternoon if he has to do it by passing cars out on the track. An example? Take the closing stages of the 2002 Indy 500. Castroneves was out of touch with the leaders, and seemed headed for a finish in the lower reaches of the top 10 until Cindric pulled off a tactical masterstroke. He calculated that, if there were ■ given number of cautions, Castroneves could make it to the checkered flag without another refueling stop.

The cautions came and, as rivals pitted, Helio stayed out and jumped into the lead - which he just managed to maintain to win the biggest prize in motorsports.

The car chief's job is to collate streams of information and work out a car's strategy on what are refered to as "fuel windows" - when the car needs to pit to refuel and maybe change tires. It's a rolling calculation, however, as the factors are in a constant state of flux.

"I have people feeding me information during the race," explains Cindric. "The fuel engineer, data acquisition man and engine man are monitoring their specific functions. I don't do any calculations, I leave it to them. What I do is decide how to act on them.'

So, what's coach Cindric's playbook?

"You have to think on your feet," he says. "The majority of it is anticipation. I'm always thinking during the race, 'if a yellow happens on this lap, what should I do - pit or stay out?'

"Many people have tried to create a pit strategy computer program, and they can't do it because there are so many variables that come into play. The difficulty comes in the unpredictability of the caution periods.

"It's m game of risk and reward," he adds. "A trade-off for track position versus how long you can run on a fuel stint, or how worn your tires are. And you're racing relative to other cars. The race leader is the one that a lot of people key from. If you're in the lead pack, the the Lune H Yandi es Seant Cales and PCA AC and the grains jarnes zaregon Iš in di i cri has i ani pa i angri ani ani prim nvie Lined Cimitre ım 🥌 n Mihai which the farse n I I II albe sures wire Teapy—a and Cuespo ta Inc.

safe thing to do is copy the leader when it comes to timing pit stops. But if you're midpack or at the back, you might do the very opposite because you've nothing to lose.'

Another complication is that, unlike the football coach, a car chief's plays are called on 15 different-sized fields each year, as each oval is unique. So a track's individual characteristics and length comes into the equation, too.

Another role is to optimize a car's on-track performance through the race. With the other technicians, the car chief constantly monitors the telemetry sent back from the car to the pit.

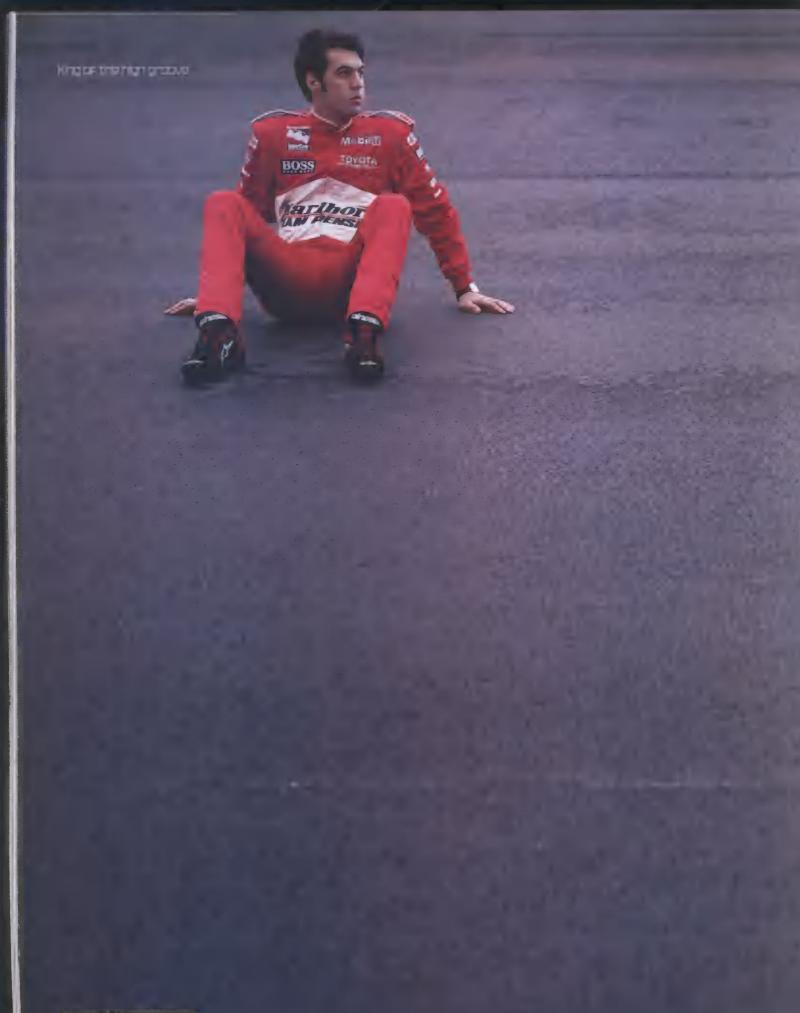
"I'll try to identify excessive oversteer or understeer, and suggest to the driver in-car adjustments such as moving anti-roll bars," says Cindric. "And then at pit stops I decide on front wing or tire pressure changes."

There's a psychological aspect, as well.

"During a green flag I try to talk to Helio every 20 laps or so, just to check he's relaxed," he says. "In ■ yellow period, communication is heavier, and we'll joke around just to loosen him up. Every driver's different, though."

Like all successful teams, Penske works as III group toward ■ common goal. But in the end, there's only one man in charge. Cindric's happy to take on that responsibility, and knows that the buck stops with him.

"I ask the engineers for the facts, not their opinion," stresses Cindric. "The driver has an opinion, but ultimately it's my call."



Words of Table Pictures Lawrence and A Kind of All Life Co.

# Aces high

HE DRIVES LINES THAT OTHERS CANNOT EVEN IMAGINE, AND FINDS A COMFORT ZONE IN PLACES WHERE THE REST FEAR TO TREAD SAM HORNISH IR REALLY IS INDYCAR RACING'S KIND OF THE HIGH DROOVE



am Hornish Jr. is made for Celebrity Poker Showdown. Whether he's holding a straight flush or junk, his face doesn't betray his hand. An amateur poker enthusiast, Hornish uses a glum expression to his advantage in weekly games, often lulling his buddies into raising and re-raising until the stakes are impossibly high. That's when, without a wink or a smile, he makes his move.

Funny how the same tricks used by a guy named Amarillo Slim work on a racetrack for a guy named Sam..

The elements of poker - bluffing, raising, knowing the odds, not letting your opponents know what you have (or don't have) - also serve as elements of Hornish's success in the IRL IndyCar Series. He's been known to lull his racing opponents, just like he does with his poker opponents, into m false sense of security.

Sam doesn't have anything. He's bluffing. He'd never try to pass me on the outside. There's nothing up there.

Nothing but aces, of course. Hornish has made a career of the dodge and weave, faking out foes by stalking them from behind, using air they can't see to get an advantage. Just when they think he doesn't have anything, he slips up and around, taking the high groove to victory.

"The only bad part about it is if you slow

play," Hornish says, taking the poker analogy up a notch. "If you try not to show your hand, sometimes it can work against you. Just like in cards, you can keep betting the minimum, just trying to keep people in with you. When it gets right down to it, you get beat anyway."

That doesn't happen often. Now 24, Hornish is an accomplished veteran of drafting and the high groove, a route he's taken to his dream job. When the IRL IndyCar Series season begins February 29 at Homestead-Miami Speedway, Hornish's mind games will be for the benefit of his new team, Marlboro Team Penske.

There's a reason he's here. Simply put, he can play games with air that he can't see on a line that most people can't imagine.

"I like the fact that it's not always about horsepower on the outside," Hornish explains. "OK, on the bigger tracks, you do have to have quite a bit more power to do it on the outside. But at the shorter tracks, you can't get the run on the inside because you're turning the car up off the corner - turning hard - and by the time you get the draft, you can't get underneath them quick enough. But if you can drive a little harder on the outside, you can do to them what they've been doing to you - make them turn really tight coming off the corner."

Control, then, is the element that's truly

High and wide, Sam Hornish Jr. heads to victory at California Speedway in 2003. The 207.151 mph average race speed was the fastest ever



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must attention. Hurnish isn's affaid ag the low line. "As large as my ear is horsely we s. I'll go wherever I need to be in analy. the pass," he says. If I can quice the pass," he says. If I can quice the saying the passes the pas IL's about name/your advantage

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### LOOK FOR THE ARGENT LOGO.



#### EVEN IF IT'S A BIT BLURRED.

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High-groover Hornish (left) www. Penske red in 2004, teaming up with Helio Castroneves (below)

invisible. Whether it's on the outside or elsewhere, Hornish instinctively knows which groove works best.

"He certainly has a knack for finding the right line," says Tim Cindric, Hornish's new boss at Penske. "Some days it's been the lower line, and some days the higher line. I think the higher line gets the attention because it gets you closer to the wall. We've been on the other side of that, where he's gone by on either side."

The prospect of Hornish wearing Penske red has the attention and enthusiasm of his new teammate Helio Castroneves.

"Sam is different," says the Brazilian. "Sam likes to run the outside. Not only that, but last year he was able to go wherever he wanted. It's different styles, but the same level of driver (as former Penske driver Gil de Ferran). Sam's a champion. He didn't win because he was lucky. He's on this team because he's done it before. I'm looking forward to learning from him."

What he's likely to learn is that the high line is more than just fun. Sometimes it's a necessity; sometimes it's personal preference.

"Sam doesn't feel comfortable being pinched on the low side by a car on the outside of him," says Andy Brown, Hornish's former engineer with Pennzoil Panther Racing. "I don't know if I'd call it claustrophobic. He just didn't like that feeling of being on the inside, so he tended to work with a car that would run on the outside. He's not a road racer by nature. A lot of these guys, when they came in from CART last year, were used to the road-course approach to overtaking. You carry a lot more speed into the corner than the opposition and try to take them on the inside. That's why a lot of the accidents were happening."

Generally, though, you'll find Hornish up and away from the white line, maintaining momentum and keeping himself from being trapped. Until he struggled early last season with Panther, which wisely used his top-of-the-track style to its advantage while struggling with horsepower, Hornish thought the groove was just a feeling. He didn't know it could be a tactic.

"I used to think it was just a preference of mine on the bigger tracks," Hornish says. "But last year we focused a lot on set-ups. We were able to make a lot of moves that we might not have done in the past but had to do because we didn't have the horsepower to drive by them on the inside. You had to really set the pass up and drive a little deeper."

The set-up goes straight back to poker. Make them think you don't have it, sucker them into that belief, then show them the truth. When his new teammate was his opponent last year, he tried some poker of his own at Nazareth Speedway.

"Helio faked like he was going into the pits," Hornish recalls. "He went down there, and I went down in behind him, but then he pulled all the way back out onto the track. Sometimes racing is about bluffing. Sometimes your bluff works, sometimes it doesn't."

But the face – that somber, all-knowing face – never changes.

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# TARCK INSPECTION



AFTER A YEAR SPENT LEARNING THE TRACKS.
INDYCAR SERIES SOPHOMORE A J. FOYT IV
GIVES YOU THE HEADS-UP ON THE IRL OVALS

#### #I Toyota Indy 300

DATE: FEB. 24 HUMESTRAU-MIRMI SPEEDWAY (1.5-MILE)

ZIIII LAPS/300 MILES

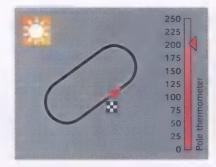
ZODO R OPLEMBRIDE STEDIT DUCCOM

IRL POLE RECOGN: EDE SAUMPH

A.J. says, "This place has got a lot more banking now. Last year it was six degrees banking and concrete, so it didn't have half the grip that it has this time around. The changes will definitely supply better racing. Last year, you hardly saw anybody going two wide, but this time I think the whole race will be pretty much two by two."

Website: www.homesteadmiamispeedway.com

Tickets: (305) 230-RACE or 1-800-PITSHOP





#### #2 Indy 200 Copper World Classic

BATE MAR 21 PHOENIX INTERNATIONAL RACEWAY (1.0-MILE)

**200 LAPS/200 MILES** 

24M3 WINNER TONY WANNAW

IRL PULE PARTITUDE 179 EXEMPTH

A.J. says, "This sure is a different looking oval. Turns One and Two we very different to Three and Four. Two's ■ lot sharper, with more banking, while Three and Four are longer and flatter, so it demands a lot from a car to drive both halves fast. You might be pushing in One and Two and loose in Three and Four, ■ you have to find ■ setup in the middle."

Website: www.phoenixintlraceway.com

Tickets: (602) 252-2227 or 1-800-PITSHOP





#### #3 Indy Japan 300

DATE: AFE, 17 TWIN FING MOTTER (1.5-MILE)

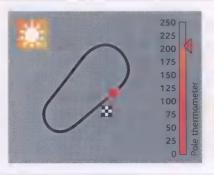
200 LAPS/300 MILES

2003 WYHIMER: SCOTT SHARP

ORL POLE RECORD, 200 JUNEAUSE

A.J. says, "Turns One and Two are pretty easy corners - long and flat-out - but Three and Four pre totally different; they're tighter and you have to get off of the gas a lot more. You do most of the overtaking coming off Two or going into Three. As a country, Japan feels very different from America, but when it comes down to doing your job, it's no different." Website: www.twinring.jp/english

Tickets: From the USA, 011 81 285-64-0489; from Japan 0285-64-0489





#### #4 89th Indianapolis 500

WITH MAY IN INDIANAPOLIS MOTOR EFFEDWAT (2.5-MILE)

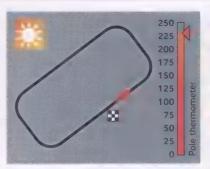
**IDO LAPS/500 MD.M.B.** 

TOOL WINNER: GIL DE FEARAM

IRL FOLE RECORD, 233,718MPH

A.J. says, "They might look the same, but all four corners are so different. It's real fast, so you trim the car out until you're un the edge of getting loose. It's such m particular line you run, you could run a foot want the white line and be in the wall, in run a foot too high and get up into the marbles. When the wind blows or it's a little hotter, you've got to find your setup all over again." Website: www.indv500.com

Tickets: (800) 822-INDY = (317) 492-6700





#### #5 Bombardier 500 & #16 Chevy 500

DATES: JUN. 12 GOMBAUDIER 1988 & OCT. 17 CHEVY 1408 TEXAS MUTTIN SPECIALIZATE (1.5-MILE) JULI LAPS/300 MICES ZONE WINNERS: AL UNSER JR (RACE #5) & KIL DE FEIMAN (RACE #16) INL POLE UNCOMO: 225.979MPH

A.I. says, "Texas is where you get some of the best racing. A lot of the time you'll easily be running two wide and sometimes even three wide. There's a lot of banking and it's I lot more forgiving than most of the other tracks. It's kinda like my home track. I live only four hours away; sometimes we go test there and I know it well, ■ it does feel I little like home." Website: www.texasmotorspeedway.com

Tickets: (817) 215-8500





#### #6 SunTrust Indy Challenge

CATE JUN. 26 MEHINDIAD INFLORMATIONAL RACEWAY (0.75-MILE) 250 LAPS/187.5 MILES

ZAME WINDHER SCOTT MERMIN

THE POLE HECDRA: LAB. TOWNER

A.J. says, "Richmond reminds and of the little dirt tracks that we used to run. It's tight and you're always turning, always working. The car's never really perfect there, and it's definitely name of the toughest tracks – especially to pass. There's hardly any straightaway, and if the guy behind you is a little quicker you can still hold him off by running a good, consistent line."

Website: www.rir.com

Tickets: (866) 455-RACE





#### #7 Kansas Indy 300

DATE: JUL. & RAWSAN SPEEDWAY (1.5-MILE) 200 LAPS/300 MILES

2003 WIMNER BUYER HERTS

INL FULL RECORD: 218.547MPH

A.J. says, "This is a forgiving track, too, with a lot of banking. Both ends are pretty similar. You're never really fighting a big push ar getting loose there, as you're just trying to drive the shortest distance around the track, trying to trim your car out as much as you can. Like Texas, it's a good track for passing on."

Website: www.kansasspeedway.com

Tickets: (913) 328-RACE





#### #8 Firestone Indy 200

DATE: JUL.17 MASHVILLE EUFERSPEEDWAF (1.33-MILE)

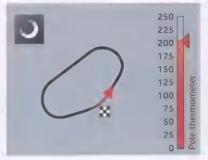
2001 WINNERS BILDE FERRAM

TRU FOLD RECORD: 206.211MPH

A.J. says, "Nashville is a concrete track. Because of that, it's definitely rougher and you've got to focus if your car's hitting the bottom. Being concrete, there's not as much grip at the other tracks and it's pretty hard a pass on, too. Setup's different and the tree is different also, at it's a pretty tough place."

Website: www.nashvillesuperspeedway.com

Tickets: (866) RACE-TIX





#### #9 Milwaukee Indy 225

DATE: JUL. 25 MILMALTER MELE (1.0-MILE) 224 LAPS/225 MILES

DURING NAMED IN / A

THE POLE RECORD TO BE ESTABLISHED

A.J. says, "This one's going to be a real challenge for a lot of the guys in the field. If few have raced here before, but many of the million by Milwaukee rookies and driving it for the first time. It's short, with not much banking, if finding a good setup on your car to possible will be very important."

Website: www.milwaukeemile.com

Tickets: (414) 453-8277





#### #10 Michigan Indy 400

DATE PUG. I MICHIGAD ENTERNATIONAL SPEEDWAY (2.0-MILE)

DIFFERENCES CHENT, BLEE BARREN

IRL PULE SECURD: 221 SEEMEN

A.J. says, "It's a great big track; two miles and very long corners, and there's always a big group of the running together. It's not the hardest track, because it's to big and the corners long that you've got a little the forerror. If your car's not perfect, you that try and stick with the leaders just by hanging to the draft, then make adjustments at your next pit stop."

Website: www.mispeedway.com

Tickets: (800) 354-1010 or 1-800-PITSHOP





#### #II Beiterra Casino Indy 300

CONTESTICE 15 RENTLICHY EPEEDWAY (1.5-MILE)

EDD LAPS/300 MINES

TODA WINNER: SAM HORNISH JR.

INL FOLE NECONO: 221.390MPH

A.J. says, "It's a mile and a half, but it's quite demanding. It doesn't have very steep banking and the corners there == quite different, too. It takes = pretty good setup to go there and run well all day in = race. But the less the banking, the ==== you've got to work == your setup for the === and qualifying."

Website: www.kentuckyspeedway.com

Tickets: (888) 652-RACE





#### #12 Honda Indy 225

DATE AUG. 22 PILES PENG INTERNATIONAL PARTER (1.0-MILE)

PAU LAPS/225 MILES

SAME MARTINGS PLANS DISCORD

RECORD: 179.874MPH

A.J. says, "This is also concrete and it's a very tough track. Last year, what a problem with the buildup of dead rubber on the tires making the car real loose in the race, so really had to work hard the setup. For me, it's definitely of the most challenging tracks on the circuit."

Website: www.ppir.com Tickets: (888) 306-RACE





#### #13 Firestone Indy 225

AUG. 21 MAINTH SPEEDWAY (1.0-MILE)

128 LAPS/225 WILLS

2003 WHOMEN HELD CASTVONSING

THE BUILD RECORD 172.778MPH

A.J. says, "How many corners has that place got? Somebody got confused in their ovals... but I had my best finish there last year, I can't complain too much. I don't think I passed is single car in the race, but I still got 11th. You're doing I lot of shifting and braking – stuff you don't usually do II ovals – I it's I bit of a change for us all."

Website: www.nazarethspeedway.com

Tickets: (888) 629-RACE





#### #14 Delphi Indy 300

DATE: SEP. 12 CHICAGOLAND IN ILL IN (1.5-MILE)

2000 LAPS/300 EXLES

EGG I WINNER BOM HORNISH JR LILE FOLK DIRECTED 223.159MPH

A.J. says, "Chicago's another big one-and-a-half-mile track. It's just big, long corners and banking. The main thing is me get your car working in traffic, because you'll always be in traffic in the draft. It's like Daytona Talladega NASCAR race the way people get shuffled, me you just bide your time and stay in the lead group until the final laps, but it's real exciting."

Website: www.chicagolandspeedway.com Tickets: (815) 727-RACE





#### #15 Toyota Indy 400

DATE: OCT. 3 CALIFORNIA EPEECA JI (2.0-MILE)

200 LAPS/400 MILES

2008 WINNER: SAM HORNISH JR.

A.J. says, "It's a lot like Michigan: really big, with long corners. To qualify, you're working un getting it trimmed out a much a you can to get the speed. You're easily flat-out, at the main thing to do if the car's not so good is just hang on, try to keep up with the guys in front of you, let them drag you around and then try and sort it at the pit stop."

Website: www.californiaspeedway.com

Tickets: (800) 944-RACE m 1-800-PITSHOP







Words Pictures LAT VIII-

# Test of time

THE 2004 INDIANAPOLIS 500 WILL BE THE 88TH RUNNING OF THE WORLD'S MOST FAMOUS AUTO RACE FOR TODAY'S DRIVERS, ITS HERITAGE, HISTORY AND CHALLENGES MEAN IT'S STILL THE PRIZE THEY WANT MOST OF ALL



n the sporting landscape, there are events that transcend sport itself and become icons in their own right. For the world of motorsports, the Indianapolis 500 fills that position. The building blocks for its unrivaled status as the globe's biggest motor race are the history, heritage and tradition it has gathered since it began back in 1911. The Memorial Day classic, the banner event of the IRL IndyCar Series, has stood the test of time and, for drivers, teams and fans, still engenders emotion and humility.

"Just being in the Indy 500 is amazing," says two-time IndyCar Series champion Sam Hornish Jr. "I get teary-eyed just going out for the driver introductions before it even starts!"

The Indianapolis Motor Speedway is the world's largest theater of human drama - quite literally. The "500" remains the largest singlevenue, single-day sporting event on earth. Its massive grandstands encircle eight-tenths of its 2.5-mile oval track. When empty, it's foreboding. When filled with 400,000 race fans, it's majestic and utterly intimidating.

Its aura has been compounded over the decades as the line of driving greats to have graced its hallowed concrete has grown. From pre-war stars such as Louis Meyer, through Rodger Ward, AJ Foyt and Parnelli Jones, then on to the Andretti and Unser dynasties and Rick Mears, the winners' list reads as a "Who's Who" of U.S. racing. Adding to the richness of its heritage is the fact that drivers from all corners of auto racing have also made the pilgrimage to the Brickyard, from Formula 1 champions, to sprint car aces, to stock car heavyweights.

For the drivers competing there this year, it's

about becoming part of that storied lineage, immortalized forever on the Borg-Warner Trophy. traditional three-

"To win the Indy 500 is the biggest achievement in auto racing," says last year's winner Gil de Ferran "When I won, it was like 'Wow, I've joined a very exclusive club'. If you love this sport, winning it hits you pretty hard."

Much of the event's magnitude derives from traditions that have sprung up over the decades. The fact that the cars are at the track for almost the whole of May is unique. The "Yard of Bricks" at the finish line salutes its pre-paved past. There's the milk for the winner and the famed Gasoline Alley, where the cars are prepared. On race day there's Jim Nabors - TV's Gomer Pyle - singing "Back Home Again in Indiana" as thousands of multi-colored balloons are launched into the sky.

Andretti Green Racing star Bryan Herta says drivers cherish the guirks that make up the Month of May. "The Indy 500 is unique," he says. "Some of the stuff you do is kind of corny - the parade, all the hoopla and drivers' meetings - but there's so much history that it's an honor to do those things."

It doesn't take a seasoned hand to appreciate what it all means to take part. Red Bull Cheever driver Ed Carpenter is one of this year's rookies.

"It's a dream come true," he says. "I'm sure it'll be stressful and nerve-wracking; but at the same time it's going to be a big relief to get there - it's what I've been racing for my whole career.'

It's the race that defined the careers of Foyt and Mears, and this year's drivers believe tasting that milk will do the same for theirs.

"It's the only thing I dreamed about as a kid," says Hornish. "And it's the one thing I absolutely have to win to be totally happy with my career."

Row two of 2003's by-three Indy 500 starting lineup gets ready to rumble



#### The Manth of May

Maratini motorial avois ale arto nare his grass Indonesionhi 1110 er luran uf its asserile savely. The fact thereine present of practice term of, quality on and that the cooking matrices of the coffithe whole munth of May is a more as but

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Darmins Alley Denayes. Once that green flag draps, it stars rain west of east nour provides: By Sasunday, o's tome for Para Day,

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Touch or own restores to Cork Day
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RENE THOMAS 1914

82.47 M.P.H.

1924 1924 98.23 M.F.I

LOUIS SCHNEIDER 1931 96.629 M.P.H.

A. J.F0Y1 1964 147.350 MPH

Vords Pictures Missississis

# Silverstars

WHEN A SILVERSMITH CARVES THE INDY 500 WINNER'S FACE FOR THE BORG-WARNER TROPHY, HE'S MAKING A PIECE OF HISTORY

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Ray Harroun, 1911 - the inaugural race
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#### Frank Lockhart, 1926 - 14th race

Frank Lockhart, the most charismatic racer of his era, wins an Indianapolis 500 he wasn't even meant to be in. The dirt racer and Brickyard rookie switches roles from spectator to driver when Indy 500 sophomore Peter Kreis falls ill. Climbing into Kreis' Miller, the barnstorming Lockhart posts the fastestever single qualifying lap of the Brickyard, averaging 115.488mph, but a disintegrating tire forces him to call off his four-lap run. After another abortive effort, Lockhart makes the field in the 20th starting spot, then quickly moves up the order in the early laps. When rain halts the race on lap 72, Lockhart is in the lead. Things get going again after an hour's delay and Lockhart pulls out a two-lap lead over Harry Hartz, before more rain halts the race for good at the 400-mile mark. Lockhart will return and take the pole the following year, but dies in a self-built land speed record car at Daytona Beach in 1928. IN THAT YEAR... The Book-ofthe-Month Club is formed. Bubbling Over wins the Kentucky Derby.

• The Indianapolis Motor Speedway Hall of Fame Museum is located within the grounds of the Speedway itself. It's open from 9a.m. to 5p.m. every day except Christmas Day, with extended hours during May. For information on tickets and track tours, call (317) 492-6784.

#### Wilbur Shaw, 1940 - 28th race

Wilbur Shaw becomes the second man after Louis Meyer to win three Indy 500s. Incredibly, it's also the first time a driver has won two consecutive 500s in its 28-year history. Shaw's Maserati lines up second, behind Rex Mays' supercharged Winfield, with Mauri Rose completing the front row. Come race day, nobody else gets a look in as the trio leads every single lap. Mays reels off 59 laps in the lead, with Rose heading five and Shaw ticking off the rest. Rain brings out the caution flags as the race heads toward its final 50 laps and Shaw is left to lead home a slowspeed procession to the checkers, ahead of Mays and Rose. It provides another first for the Indianapolis 500: the first three starters are the first three finishers. The next year Shaw leads for 107 laps, but crashes out, then announces his retirement. IN THAT YEAR... Hitler invades France. The Pennsylvania Turnpike opens.





#### Jim Clark, 1965 -49th race

Do you call it the end of an era or the beginning of a new one? Scotland's Jim Clark wins the Indy 500 in his Lotus-Ford 38 - the first victory for a rear-engined car and the final straw for the extinction of the frontengined roadster dinosaurs. The winning car is one of 27 rearengined machines in the race, against just six roadsters. Clark is beaten to the pole by A.J. Foyt's Lotus, but takes the race lead on the first lap. After Foyt briefly fights back, it's Clark all the way, helped by the swift pit work of NASCAR's Wood Brothers crew. After Foyt retires, Clark wins by two clear laps. His 150.686mph average speed establishes a new race record. In third place, Mario Andretti wins Rookie of the Year. IN THAT YEAR...U.S. troops arrive in Vietnam.





## Toyota aims For repeats

AFTER WINNING THE 2003 INDIANAPOLIS 500 AND EARNING IRL INDYCAR SERIES TITLE GLORY, TOYOTA IS WORKING EVEN HARDER TO DO IT AGAIN

eaturing a deep and talented line-up that includes three series champions and a two-time Indianapolis 500 winner, Toyota will be attempting to repeat its Indianapolis 500 victory and IRL IndyCar Series Manufacturers' and Drivers' Championships in 2004.

Returning from 2003 are five teams – Target Chip Ganassi Racing, Marlboro Team Penske, Kelley Racing, Mo Nunn Racing and A.J. Foyt Enterprises – that will field at least seven Toyota–powered entries this season.

"It was a terrific accomplishment to win 11 of 16 races, including the Indianapolis 500, and both the Engine Manufacturers' and Drivers' Championships in our inaugural IndyCar Series season," said Jim Aust, Toyota vice president of motorsports and the president and CEO of Toyota Racing Development (TRD), USA. "But this is a new season, and you don't get any points for what you did last year. Everyone at TRD knows that we must be even better in 2004 if we hope to repeat. We're thrilled to have all five of our teams returning from last season."

Defending champion Scott Dixon will return in his Target Chip Ganassi Racing Toyota after earning the IndyCar Series title in his first IRL season. The New Zealander led the league in virtually every statistical category in 2003. He will be joined at Ganassi Racing by series newcomer Darren Manning, who finished ninth overall in last year's CART Champ Car series.

While Dixon won last year's title, Marlboro Team Penske driver Sam Hornish Jr. is the only driver in series history to win a pair of championships. The Defiance, Ohio native is the series' all-time leading race winner and the 2001-'02 champ. Teaming with Hornish will be two-time Indianapolis 500 champion Helio Castroneves. The 2001-'02 Indy winner barely missed earning a third consecutive "500" win last year when he was edged by his Toyota-powered teammate Gil de Ferran. Castroneves finished third overall in the Drivers' Championship last year, with Hornish fifth overall.

Kelley Racing won two races in its first season with Toyota power while running a pair of entries. This year, the team will focus its efforts on 1996-'97 IRL champion Scott Sharp. The American won the inaugural IndyCar Series race in Motegi, Japan. Sharp will be striving to extend to eight his IndyCar Series record for consecutive seasons with a victory.

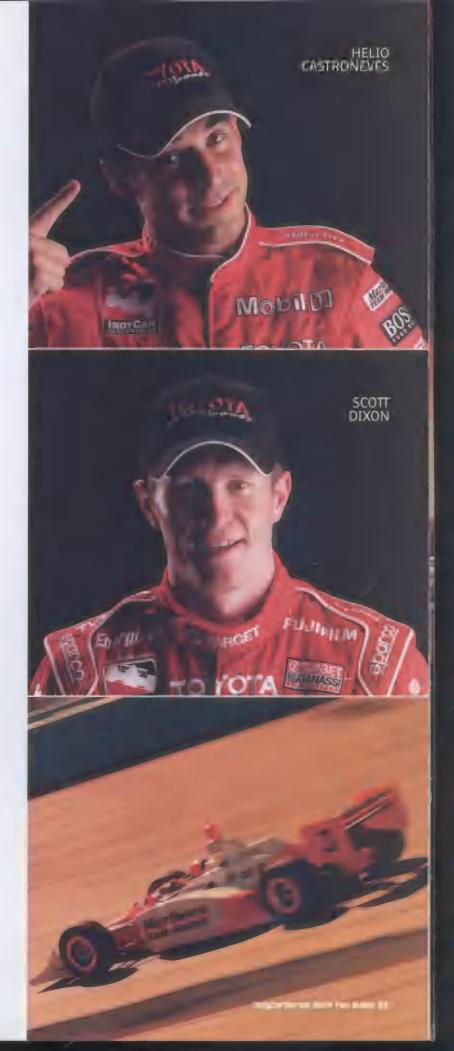
Last year, Tora Takagi earned nine top-10 finishes, including a third overall in Texas, on his way to a top-10 spot in the points in his first IndyCar Series season. This year, the former Formula 1 driver will be back to drive Mo Nunn Racing's Toyota-powered entry.

Back with Toyota for a second season is 19-year-old A.J. Foyt IV, who became the youngest driver in IRL history last season when he began his campaign as an 18-year-old rookie. He will once again race for his grandfather, the legendary four-time Indy 500 winner A.J. Foyt.

In addition to on-track competition, Toyota will again serve as the title sponsor for two IRL IndyCar Series events in 2004. The Toyota Indy 300 at Homestead-Miami Speedway, Feb. 29, is the IndyCar Series season-opener. The Toyota Indy 400 is at California Speedway on Oct. 2. Toyota is also the "Official Vehicle" of the Nashville Superspeedway.

The championship-winning Toyota Indy V8 engine continues to be designed, built and developed by TRD, USA, in its 80,000-square foot Costa Mesa, Calif., facility. ■

TOYOTA





DAY SOFF ARE A DARWELL FOR A PROFESSIONAL RACE FAR DEWEN WE AN THEY GET ONE, THE IND. CAR. LRILL US, VLK.: FILL IT TO THE MAX

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# R NEW DAIVE

MICHAEL ANDRETTI LED HIS LAST RACE, THE 87TH INDIANAPOLIS 500, THEN HUNG UP HIS HELMET FOR A NEW CHALLENGE AS A TEAM CO-OWNER. A YEAR DOWN THE LINE, HE AND HIS TEAM ARE LOVING IT

uring the first race after the Indianapolis 500 last May, Michael Andretti wandered about Texas Motor Speedway like a kid who'd just finished lunch while his buddies went swimming. He stood poolside, waiting the customary, mother-approved hour before diving into the fun.

But in this case, the clock didn't move. In fact, it won't ever move. Andretti will watch his buddies splash and dunk endlessly, passing occasional comment on proper splashing and dunking techniques. For most people, ceasing a beloved activity while continuing to watch is torturous. Not for Michael. Now preparing for his first full season as an owner without the slash of owner/driver, he's embraced his new role, doesn't secretly yearn to drive again, and doesn't look like a kid out of water anymore.

"It's scary, actually, because it hasn't been difficult at all," he explains. "I haven't really had a desire to get back in the car. Because of that, I know I definitely made the right decision. I was ready to change my life and get on and take on new challenges. This was right up my alley as far as what I want to do, and I feel like I'm very lucky that I've been able to do everything the way I've been able to do it. It's been on my terms. It's not like I was pushed out the door or faded away. I did it when I still felt like I was on top. I know I could have won the last race I was in. That's the way I always wanted to retire. I'm very happy with it. It's been fun, challenging and different, but that's what I wanted."

What he has is an unusual position as co-owner of Andretti Green Racing, a role that doesn't involve the day-to-day operation of the team but rather deals primarily with its four drivers - Tony Kanaan, Dario Franchitti, Bryan Herta and Dan Wheldon, He's part coach, part confidant, part cheerleader.

"I'm just looking to help them and have them come to me," he says. "I have my experience, and I see a lot of things. The biggest thing I bring to it is I'm somebody the drivers can relate to, somebody who can take what they're saying and interpret it from a driver's standpoint for the rest of the team. They like having that, and I like that. They trust that I understand what they're saying. That's important."

That's what Andretti – the new Andretti, the one who doesn't drive anymore – is seeking from his reconfigured role: what's important. Officially, he's a co-owner of the team. Unofficially, he handles the personality part of it, the on-track product. While Kim Green runs the daily operation, Kevin Savoree handles the books. Michael, just as he wanted, handles the driving side of it.

That's how it was planned when the trio decided to transform Barry Green's CART team into an IRL IndyCar Series team for 2003. Michael would drive the first four races, then retire following the 87th, hopefully triumphant, Indy 500. Andretti led 28 laps before his throttle linkage broke, ending his Indy legacy at 426 laps led and no wins – a legacy that draws  $\blacksquare$  cringe, even from his teammates.

"When Michael made the decision to come to the IRL, everybody on the outside had big



expectations for us to not succeed," Kanaan recalls. "Everybody was expecting us to fail. We knew what we could do, so we didn't listen to the criticism. We used that as an extra boost to help us succeed. We showed them right at the beginning of the first race and then the second race. We kept showing them."

Andretti is holding court in a chrome-andglass conference room on the second floor of AGR headquarters in Indianapolis. Saying he needs to have a private discussion with three of his drivers, he clears the room.

"Uh-oh," Kanaan says with mischievous grin. "We're gonna get yelled at."

Franchitti and Herta burst into laughter. Andretti beams. This is what he loves, the camaraderie. It's also what he knows best. AGR originally began as Andretti, Franchitti and Kanaan. Wheldon was the expansion player, groomed to replace Andretti after the 500. When Franchitti broke bones in his back in a motorcycle accident, Andretti turned to another old friend, Herta, who takes a fourth car for 2004. The group is well-pieced and comfortable together, a function of Andretti's design.

"With all the problems we had, one of the things I wanted to do was, as a replacement for Dario, get somebody I knew would fit in," Andretti said. "Bryan was perfect. Having him on the team as a fourth driver makes things even better. The four of them get along so well, and that's one reason the whole team gets along so well. If they see the drivers getting along, everybody else seems to get along."

That pre-planned cohesion came in handy. The team's - and Honda's - decision to join the Indy Racing League came late. AGR and Honda were behind from the start, yet Kanaan led the standings for a large chunk of the season, and was in a position to win the championship until the final laps of the season finale at Texas.

"We learned a lot," Kanaan said. "We definitely gained even more confidence in each other. Working together is the secret. We know this is really strong and this is what's going to bring us to the next step. We have a competitive team, good engines and good cars. We know we can do the job. But we have to have something else, because the series is so competitive. What is that something else? The way we work together."

That's a product of the boss, who's having the time of his life as the guy behind the scenes. The drivers see the effort, the improvement, and the future.

"I know how hard all the guys in the team are working on this," Franchitti says. "You can see the amount of money that these guys are putting into the development of the package. That's what it's going to take. It takes that commitment from everybody. We've just got to do it better than anyone else, and that's what we're trying to do."

Doing it better means doing it with more intensity. That fits with Andretti's style. Smart but aggressive worked on the track for ■ record 42 CART victories; makes sense that the same approach will work in management.

"I always thought I was an aggressive guy, but I never thought I did many stupid things on the track," Andretti says. "I made aggressive moves, but I normally pulled them off. That's how I want to see this team work. Aggressive but thought-out. I think that's the way we've been. We've made a lot of positive moves within the team to make it stronger."

But one question continues to follow Andretti the owner. Does he miss driving?

"No, not at all," he says. "There was moment there for a couple of races where I was trying to see where I fit in, but I don't think that I ever once thought I did the wrong thing. I was just trying to figure out where I wanted to be.'

No question anymore. He knows exactly where he wants to be.

Michael Andretti led his last race, the 87th Indy 500 (below left). Now, he's happy evolving m new role at Andretti Green Racing









Mannus and first in Survivers and AGR teammates Pryor Herta and Dan Whendon brooking the Survivers

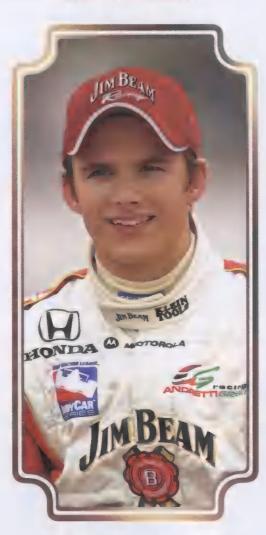
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## DAN WHELDON

2003 IRL INDYCAR® SERIES ROOKIE OF THE YEAR

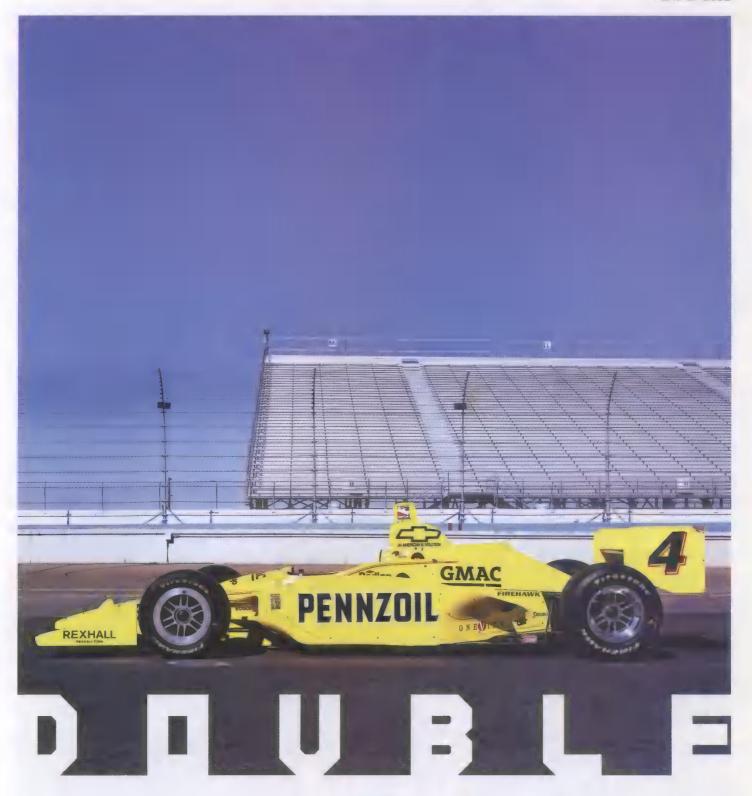




JIM BEAM REMINDS YOU TO DRINK RESPONSIBLY

Fanther has twice the site for 2004. Simus Scheckler takes over the Pronzellour English with Mark Taylor in the Menands, machine (left)





It's been a winter of change for Panther Racing. Sam Hornish Jr. has switched to Penske and his old team has more than doubled in size to run two race cars and two new drivers, Tomas Scheckter and Mark Taylor. What stays the same is the will to win from everybody involved

hortly before Christmas, not far from the chalkboard announcing the daily pit stop practice, the heart and soul of Pennzoil Panther Racing gathered for a meet-and-greet with their new employees. The newbies, a mix of fresh hires and workers who moved from Team Menard, introduced themselves. The Panther veterans followed. Almost to a man, the vets repeated at theme: We were responsible for winning.

When Sam Hornish Jr. left Panther for Marlboro Team Penske, he left his old teammates some motivation. For the

previous three seasons, the people behind double champ Hornish's success felt too much of the credit had gone to the guy behind the wheel. They'd won and won, and never got much credit.

Therein lies the motivation behind the new Pennzoil Panther Racing. Prove once and for all that racing is, indeed, I team sport.

"The common thread among the guys was how badly they wanted to show the world what a good team Panther is, and that it wasn't just all about Sam," explains Andy Brown, Panther's chief engineer. "We were second in the championship the year before Sam joined us, but people forget that. He's a great talent, no question. But don't think in this day and age that even the best drivers can win races without a good support group behind them."

They're also about expansion. Panther has added a second car for 2004, building on the '03 championship effort in the IRL Menards Infiniti Pro Series by moving that crew – and driver Mark Taylor – up to the IndyCar Series.

"We did the Infiniti Pro Series last year knowing that we were going to move those people into a second IRL car," says Panther co-owner John Barnes. "We were blessed, because the people we got – Brent Harvey and Kevin Conley – were able to move right in to the new positions. Looking after two entities at the same time hasn't changed. It's not like we suddenly woke up one day and said, 'OK, now we have a second operation.' We worked ourselves into # position to do it successfully."

Part of that was absorbing Team Menard and a handful of its employees, while carrying the familiar blue paint scheme and Menards and Johns Manville logos on the Chevy-powered Dallara which, naturally, Taylor will drive.

But this isn't your average team. For starters, it has five owners – Barnes, former radio personality Mike Griffin, former NFL quarterback





Jim Harbaugh, businessman Doug Boles and auto dealer Gary Pedigo. It's a structure that lends itself to teamwork and commitment.

"Everybody is looking out for each other,"
Taylor explains. "If you have a problem, you can
go to anybody on the team for some good
advice. Nobody in this world knows everything
about what they're doing or what other people
are doing. You need to try to pull the resources
together to give everybody the best opportunity
possible. I think that might be what's missing in
other teams. They can't connect."

In 1999, the team won for the first time with Scott Goodyear at Phoenix International Raceway. In 2000, he finished second in the IRL standings. Panther then hired Sam Hornish Jr., resolutely stayed as a single-car operation, and won IRL championships in '01 and '02.

This year, Panther has more than doubled its roster, now employing 54 people. But compared to other two-car teams, it's a smaller operation with a smaller budget. Among the new hires is Hornish's replacement, Tomas Scheckter, who's thrilled to be with The Little Team That Could.

"This team has won two championships, one of them against Penske," says Scheckter. "It would be scary to see what their budget is compared with ours. This is a team with a lot of heart. Some teams, people just come in to work every day. These people come in to work every day wanting to win. It makes a big difference."

Compare Panther with heavyweight IRL teams like Penske, Target Chip Ganassi Racing and Andretti Green Racing, and you'll find some glaring differences. Not that the guys in yellow are paying attention, of course.

"We don't look outside this building," Barnes says. "We look at what we need here and then we just do it. We expect to win. You can talk to anybody in this place – from the parts runner to the painters to the mechanics to the fabricators to the engineers to the bookkeeper – everybody here expects to win. I'm not saying that to brag; I'm saying that we've done this and we know what it takes to do it. We've tried to assemble the people to do it."

The team's unity is summed up in its unofficial slogan: us against the world. But to take on the world is a pretty big task, so you have to work hard to be the best.

"You have to understand that everybody here is hugely competitive," Barnes says. "Winning is the only answer. Second place is first loser in our operation. These guys work every day on pit stops. They work on every aspect of them, getting them better. That's what we try to maintain."

Brown pauses from being teased about sending e-mails to his workers at 2:30 a.m. (another clue to the passion and sheer dedication in this place) long enough to empathize with their anonymity. All work and no press makes Panther a hungry machine.

"I can understand the feeling of the guy who works his tail off and gets very little recognition for it," he says. "I find it remarkable that those guys can keep going without any recognition, but they're the heart and soul of a race team. It wouldn't happen without them."

One promise. This time, when it does happen, it will be duly noted. ■

Tomas Scheckter (top right) and Mark Taylor (left) head Panther's two-car attack. The team has geared up well for its expansion



## Winning Wayer SCHECKTERIS READY FOR SUCCE

As Miss Englin what he thinks of inmas sale where Then support out quicking. He's flows every have solve as ima him to dis." says Official, one of five asserts in the Formauli Parther having to aim. "He's had a great sain do suddow, and he's ivady to anything."

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## Technical knockouts

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## Kurtis-Kraft KK500A 1952

#### MASTER KRAFTSMEN

For the half-decade following World War II, cars competing in the Indianapolis 500 were largely holdovers from the pre-war era. The Maserati that Wilbur Shaw had driven to victory in 1939-'40 was still a competitive proposition in 1949. And as late as '52, a dirt-track adaptation such as Troy Ruttman's Kuzma was good enough to taste the milk. But Ruttman's win was fortuitous, for a new type of Indy racer had demonstrated its superiority.

Kurtis was popular IndyCar manufacturer, but that year a new liaison produced the lowslung Kurtis-Kraft that would set the trend for IndyCar chassis design for the next decade.

The KK500A was conceived by Jim Travers and built by Frank Kurtis, and was a clear departure from pre-war designs, which typically positioned the driver high in the car. The idea that Travers and Kurtis came up with was to offset the engine 9 inches left of the centerline, and position the driver to the right. This allowed the driveshaft to run alongside, rather than underneath the driver's seat, and suddenly the driver was far lower in the car.

The result? A lower center of gravity, better aerodynamics and less tire wear on Indy's high-speed left turns. Because the driver sat so low with street rod-style shoulder-high bodywork on the left side, the KK500A's were given the "Roadster" tag that became the generic name for IndyCars during the next 10 years.

Californian Bill Vukovich dominated that '52 race in an Offy-powered version of the "laydown" design, after a similar cigar-shaped Kurtis, the Cummins diesel-powered car of Freddie Agabashian, had been planted on the pole. But nine laps from the finish, Vukovich's steering pin failed, handing Ruttman victory.

Undetered, Vukovich converted speed into results by winning both the '53 and '54 500s, driving that very same KK500A chassis. The Kurtis-Kraft's path to legendary status was set in stone. Frank Kurtis continued to refine his designs, and in 1955 a KK500D driven by Bob Sweikert won a third 500 for the marque.

Sweikert's crew chief, A.J. Watson Jr., went on to improve on Kurtis' design by creating the Watson Roadster, which then outran the Kurtis entries to win the 500 in '56. Watsons went on to score another five Indy 500 wins, ruling the roost right up until the next technical revolution – European–style, rear–engined race cars – would render them obsolete. At the Indy 500, no dynasty lasts forever. *R.C.* 

3 Lotus-Ford 29 1963

#### **POWER BEHIND THE THRONE**

Lotus founder Colin Chapman came to the 1962 Indianapolis 500 as a spectator. In 1963, he returned as an entrant, bringing with him III car that would forever change IndyCar designs: the rear-engined Lotus 29.

To an engineering genius such as Chapman, it was obvious during that first visit that the front-engined Indy Roadsters were relics from a bygone era. He was also mightily impressed by the level of prize money on offer, which dwarfed anything in Formula 1 at the time.

Rear-engined cars were *de rigeur* in grand prix racing since 1960. Having the motor behind the driver had the advantages of better weight distribution and traction, and allowed for a lower, lighter and more rigid chassis.

There had been rear-engined cars at Indy before Chapman entered Jim Clark in 1963. Innovative pre-war designer Harry Miller dabbled with them in the late 1930s, while in '61, two years before Lotus, reigning F1 world champion Jack Brabham brought a Cooper to the Brickyard. But that was essentially just an adapted F1. In the Lotus 29, Chapman had racer specifically designed to win Indy.

The Englishman's effort was given extra impetus by the partner he persuaded on board. Shortly after his '62 Indy visit, he returned to the USA to visit another party with its eyes on the Borg-Warner prize: Ford. Offenhauser engines had dominated Indy for 30 years. As part of its "Total Performance" initiative, Ford planned to unseat Offy. Chapman's radical proposal was to build I lightweight car powered by Ford's all-aluminum 4.2-liter V8 that could run 500 miles on just II single pit stop.

The result was the 29. With ■ monocoque chassis, 400 horsepower and just 1130lbs total weight, it set a new standard for power-to-weight ratio in an IndyCar. To counteract centrifugal forces on Indy's banking, the engine and transmission were offset 2.6 inches. And to save time during the one planned pit stop, Lotus utilized Halibrand light alloy knock-off wheels.

A series of cautions – and the lack of a black flag for Parnelli Jones, whose Offy was leaking oil – foiled the Lotus masterplan in '63, then tire trouble blunted the Lotus 34's effort in '64. But by then, the impact of Lotus was clear. In qualifying for the '64 race, Jim Clark shattered the lap record by 8mph. What's more, the field had 12 rear–engined cars on the grid. The tide had turned, and in '65, the year Clark and Lotus triumphed, 27 of the 33 starters were rear–engined. The Roadsters' day was gone. R.C.

## A step the par...

THE DESIRE TO IMMOVA E LOS OF THE LED TO CLORTOUS FAILURE FT THE IMPOUND FOR every high-tech success there has, naturally, been a multitude of failures – some glorious, others plain ignominious.

There have been daring departures by free-thinking engineers that have proved effective, yet have never caught on, or have been stomped on in their early stages by the ever-evolving rulebook. But there have also been bizarre creations that, with hindsight, should never have left the workshop.

Take the Hurst Floor Shift Special designed for 1964 by Smokey Yunick, of stock car racing's greatest innovators. The tiny rearengined car was so compact that the driver sat in motorcycle sidecar stuck on the side! Duane Carter tried it, but refused to get back in...

Legendary hot rodder Mickey Thompson was the first to bolt an American V8 to a rearengined chassis in 1962, but by '64 his Thompson Special had become a wedge of all-enveloping bodywork that proved almost impossible to drive. Its driver, Dave MacDonald, perished in that year's many when he lost control.

There's never been more extreme rearengined car than Ken Hamilton's Eagle Aircraft Flyer that practiced in 1982. The driver's cockpit pushed so far forward that three-quarters of the car was behind him! If soon parked for good.

Andy Granatelli was nam of Indy's great innovators. He reintroduced four-wheel drive to Indy in 1964, and added II turbine in '67, when Parnelli Jones qualified and finished sixth. The car produced 550bhp, but weighed in only 50lbs. over the minimum weight. The piston-engined competition will nervous...

When the rulemakers inevitably squeezed his turbine air inlets, Granatelli and Colin Chapman produced the wedge-shaped Lotus 56 turbine (below). They qualified one-two for 1968's Indy 500, but I m a troubled race. The turbine, like so many other great ideas, disappeared. T.S.



### Creative urge

PROBLEM DAY DIDIYAN LAPSTELLAS STOR. HAVE PLINTY OF ELLUF FOR TO GRANITY

With m many weird and wonderful creations dreamed up for the Indy 500 over the years, modern many appear man uniform than their predecessors at a first glance.

But everyone involved in the IRL IndyCar Series today, be they chassis makers, engine builders or teams, non ceaseless in their efforts to gain at technical advantage – and this means thinking "outside the box". After all, how radical looking and Dallara's low-slung, point-nosed 2003 chassis? And what about the afforce's valley-shaped sidepods?

The job for Brian Barnhart, the IRL's senior vice-president of racing operations, is two-fold: to restrict certain areas for the sake of cost reduction and speed limitation, but also to encourage hi-tech engineering excellence.

"Our job is to create a balance whereby the rules provide a challenge for engineers and manufacturers, yet also contain performance within certain boundaries," says Barnhart.

The distinct visual differences between the chassis innovations that Dallara and G Force produced for 2003 are proof of individuality being applied within the rules. And the internals of the engines from Chevrolet, Honda and Toyota are all very different, too.

"The main warm for technical ingenuity on engines is the cylinder heads, and the solutions that all three have come up with wastly different," explains Barnhart. "But the difference on the track is negligible. And that has been our success, I think.

"At the same time that the technical paths chosen by the various participants are substantially different, the end result at track is incredibly close. For sure, there are fewer areas for innovation for individual teams, but they still have enough options at their disposal to distinguish their levels of performance."

In auto racing, the innovative imagination and sharp mind will always prosper. *T.S.* 



## Chaparral 2K 1979

#### SEE YA, SUCKERS!

A quarter of a century on, even the name sounds cool: Chaparral 2K. It's tradition and sci-fi in one. The car itself? Beyond cool.

Sure, the ageless Pennzoil colors enhance anything they sheath, but look at a monochrome picture of a pack of cars at the 1979 Indianapolis 500, and the 2K's outline jumps out of the frame. It makes the cars around it look obsolete. A Penske PC7 is handsome, but its center of gravity looks too high and it clearly sits on the pavement. By contrast, the Chaparral spreads its sidepods wide and appears to embrace the track, smother it.

And that look was more than just cosmetic; it was scientific. For this was the car that brought fully formed "ground effects" to Indy, and proved the worth of an aerodynamic feature still central to IRL IndyCar design today.

IndyCar engineers had discovered ground effects - shaping the underbody of a car like an upside down wing to push it onto the track for added grip - in the early 1970s. But no-one quite knew how to fully exploit the potential. Then Colin Chapman created the Lotus 78 Formula 1 car, and the significance of its skirts - thin strips of material that filled the gap between the bottom edge of the side bodywork and the track surface - was recognized by Chaparral's English designer, John Barnard. With the blessing of Chaparral's brilliantly innovative founder, Jim Hall, Barnard penned the 2K with two large, shaped tunnels, called venturis, in the underside. Adding the skirts formed an airtight seal that literally pulled the car toward the ground as it moved forward.

The result was startling. On the car's debut, Al Unser qualified third for the '79 Indy 500, then led the first half of the race easily until a technical problem intervened. But for a number of reasons – including the initial unreliability – Unser grew disenchanted with Chaparral and he walked out at the end of the year.

Johnny Rutherford, who passed Big Al on his way in, could scarcely believe his luck: a master of car development had sown the seeds, then left the harvest for others to reap. "Lone Star J.R." relished the opportunity, and the result was the '80 Indy 500 pole and a dominant win.

Other designers and teams would go on to fine-tune the ground-effects concept to even greater effect in the seasons to come. But in IndyCar racing, it was Barnard and his mentor Hall who first saw the light at the end of the venturi tunnel. *D.M.* 

## Penske-Mercedes PC23 1994

#### WHEN PUSHROD COMES TO SHOVE

From 1987 through '93, the Chevrolet V8s built by Ilmor Engineering dominated IndyCar racing, with the General Motors brand winning seven straight Indianapolis 500s. Then, midway through '93, came stunning news: Chevy was pulling the plug at the end of the season.

Ilmor went looking for a new IndyCar partner for '94. Enter Roger Penske. Like every team owner, he'd read his copy of USAC's rulebook for the Indy 500. It's just that he read between the lines. Rules written to help the pushrod Buick V6 turbo allowed for nearly 50 cubic inches of extra displacement, and 10 inches more boost than the four-cam V8s that had won every Indy 500 since 1977. So Penske went to Ilmor with a proposal: build an all-new pushrod, and have the mighty backing of Mercedes-Benz at your disposal.

The Three-Pointed Star at Indy? It was hard to imagine, yet racing historians were quick to note that entries from Benz and Mercedes (then separate companies) had been among the first cars to compete at the Brickyard, with Ralph DePalma winning in 1915 for Mercedes.

Fast forward eight decades. Mercedes had returned to Formula 1 for the first time in 38 years in '93, and was also turning its attention to the U.S., where it was launching AMG's high-performance versions of its range. With the legend of the Silver Arrows from the 1930s and '50s on the line, failure was not an option.

Built by Ilmor in a top secret, 26-week program, the new Mercedes-Benz 500I engine was a 209 cid pushrod turbo V8 that developed 1000bhp, 200 more than the four-cam V8s.

In mid-April, Penske sprung its surprise on the Indy establishment – and quickly showed it had found an advantage on a scale rarely seen in modern motorsports. No-one had a response, and the team's PC23 cars simply dominated the entire Month of May. First, Al Unser Jr. took the pole. Then in the race, Unser Jr. and teammate Emerson Fittipaldi led all but seven of 200 laps. Fittipaldi led for 145 of those, but with 15 left, he squandered a lead of over a lap with a miscue at Turn Four. He hit the wall and handed the win to Little Al.

For '95, USAC closed the loophole, cutting a pushrod's turbo boost from 55 inches to 48. The team used Mercedes' new dual cam racing V8, a good engine in itself. But without that extra power to compensate for an uninspiring chassis by Penske's high standards, neither Unser Jr. or Fittipaldi even qualified for the Indy 500. From innovation to subjugation... R.C.

HAUTEVOLINE

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1994 The Penske PC23's Mercedes engine was a classic case of finding a loop in the rules to exploit



# Infinite possibilities

THE MENARDS INFINITI PRO SERIES HAS PROVEN TO BE A SUCCESSFUL FINAL STEPPING STONE INTO THE INDYCAR BIG TIME. THIAGO MEDEIROS HEADS UP THE CLASS OF '04

othing's a certainty in auto racing. That's a given. But based on past events, you can say with a fair degree of certainty that whoever wins this year's Menards Infiniti Pro Series won't have done their chances of moving up to the heady heights of the IRL IndyCar Series any harm at all.

Take a look at the facts: two years into the program and 2002 champ A.J. Foyt IV is gearing up for his second full season in the "Big Show", while last year's title-winner Mark Taylor is the man in the hot seat as the crack Panther Racing squad adds a second car to its 2004 roster. Two MIPS champs crowned so far, and both elevated to the major leagues – that's pretty impressive in itself, but add in '03 front runner Ed Carpenter at Cheever Racing and the championship more than lives up to its status as the IRL's official feeder series.

For 2004, the formula remains the same. Hey, why change it? The 12 races, including a prestigious slot at the Indianapolis Motor Speedway, all share the bill with the IndyCar Series and all run to 100 action–packed miles. The 450bhp Infiniti Q45 engines and Dallara chassis are identical, so it boils down to the guy behind the wheel and what he can do.

"It's the perfect place to be if your goal is to race in the IndyCar Series," says Taylor. "Firstly, you're racing on the same tracks as those guys and learning a lot of the skills you'll need to be competitive at the next level; secondly, it all comes down to what you're capable of, not the car. And thirdly, you're racing under the noses of the IRL team owners and sponsors – the guys who make the decisions. Every time we go out there, they can take a look and check out exactly what we can do. In I way, it's extra pressure, but it's a positive kind of pressure."

Taylor's '03 record of seven wins and four

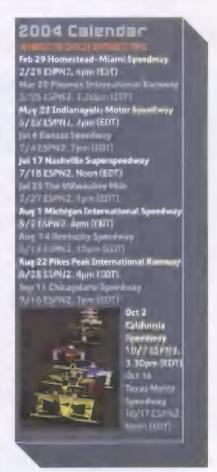
poles made a compelling case for his promotion within the Panther organization, but now that he's been given his big break, he knows the rest is up to him.

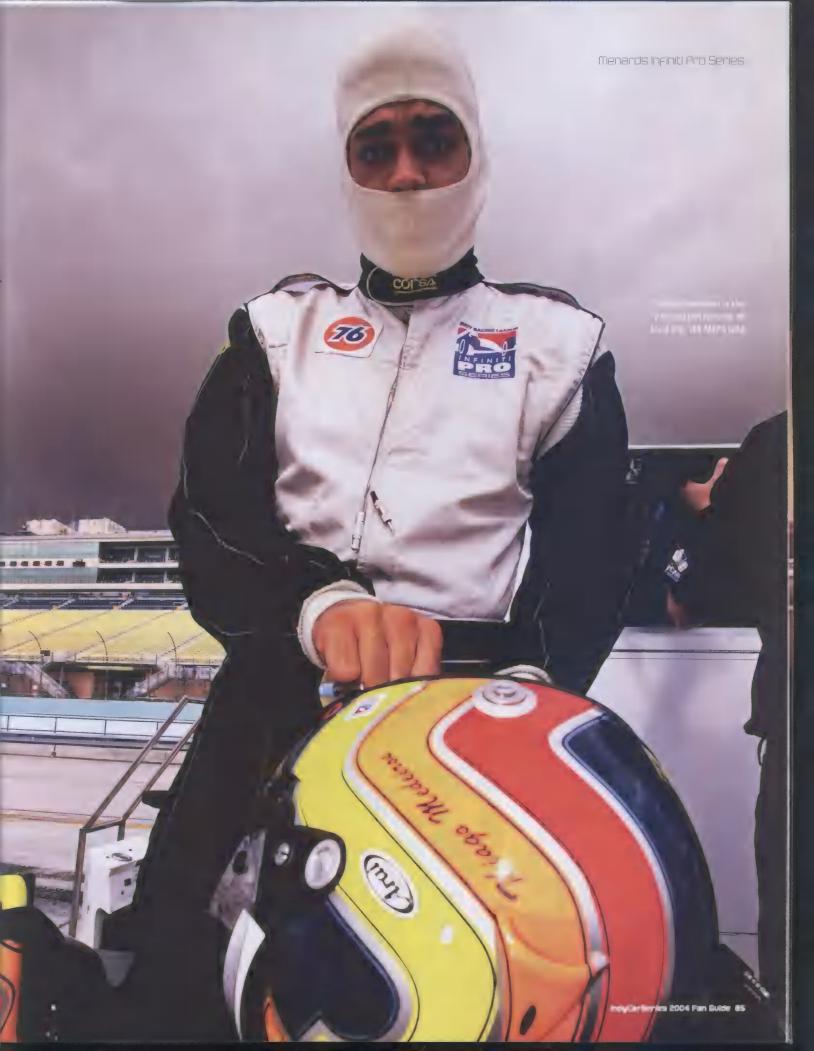
"I'm straight off the top of one learning curve and onto the bottom of the next," says the 26-year-old Englishman. "It's Triple A to MLB, or high school to Harvard. Suddenly, I'm going to be going wheel to wheel with Helio Castroneves, Sam Hornish and Scott Dixon. It's exciting and daunting at the same time, but the Menards Infiniti Pro Series is a fantastic grounding for what comes next."

Pre-season favorite to join Foyt and Taylor as a card-carrying MIPS champ is Thiago Medeiros. In his first season on the ovals, the Brazilian won the '03 season finale on the high banks of the Texas Motor Speedway and recently topped pre-season testing at the Homestead-Miami Speedway in Florida with his new team, Sam Schmidt Motorsports.

"I learned a lot about oval racing last year," he says, "but there's still a lot I can gain from a second season in the Menards Infiniti Pro Series. I have a dream to be racing in the IRL IndyCar Series and my ambition is to win the Indianapolis 500, just like my heroes Emerson Fittipaldi and Gil de Ferran."

Fittipaldi won at the Brickyard in 1989 and 1993, while de Ferran signed off from a storied career in racing with victory in last year's Indy 500. Add in back-to-back Brickyard wins for Helio Castroneves in 2001–02 and it's been rich pickings for motorsports-mad Brazil over the last decade and a half. Whether Medeiros joins his countryman on the Borg-Warner Trophy remains to be seen. But as A.J. Foyt IV, Mark Taylor and Ed Carpenter can testify, he's going about things the right way to give himself a shot at it.



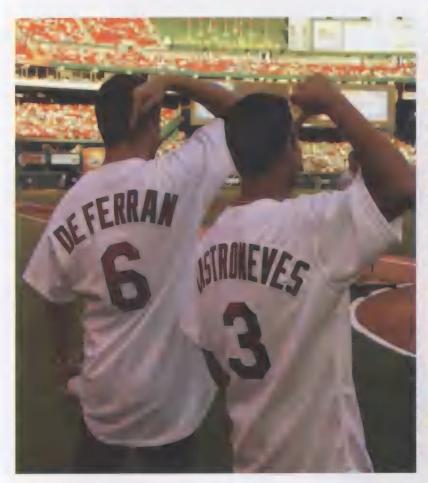


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# Experience counts

WHEN YOU CO TO AN INDIVIAR SERVE PACE, THIRE'S A LOT NORE TO SEE THAN SPECTACULAR ON TRACK ACTION A TRANSLING CROUS OF FAMILY FEIN ILSU FOUS IN TO TOWN









hat's it like to drive an IndyCar? To have Scott Dixon breathing down your neck with one lap to go? Or measure your skills against fans just like you? The answers lie at the Indy Racing League Fan Experience, I mobile entertainment system that travels throughout the USA all season long. Since its inception, the Fan Experience has connected 1.6 million people to the speed and drama of the IRL IndyCar Series.

The vast scale of the Fan Experience rivals any operation planned at the Pentagon. Once the various vehicles and personnel hit the road, the show is constantly on the move, returning home only at season's end.

"This is the largest traveling fan exhibit of any sport in terms of numbers of locations and event days," says Bill Long, the IRL's VP of marketing. "We visited over 600 locations in 2003."

The Fan Experience comprises several elements, each its own self-contained, standalone, interactive venue. The components include The Indy Racing Challenge, Indy Racing Kids, Indy Racing Live and the Indy Racing Pit Stop Challenge. Each offers fans hands-on experience in different areas of IndyCar racing.

First stop is that taster of what it's really like to drive a 220mph open—wheel racer on a banked oval. The Indy Racing Challenge allows you to sit in a real IndyCar chassis that's hooked up to a powerful simulator.

Then group together for some active fun, and take on a rival crew of over-the-wall fans

at the Indy Racing Pit Stop Challenge. This puts you right at the heart of the 10-second tire change and refueling frenzy that IndyCar crews face each race day.

Children won't be left out of the fun, either. Indy Racing Kids gives them a chance to pedal IndyCar-style cars around a miniature track, or race slot cars. And there's a video games kiosk that allows you to drive your favorite IRL tracks with Codemaster's new IndyCar Series game for the X-Box console.

The Fan Experience is at the circuits for all 15 of the IRL IndyCar Series' U.S. rounds, and it's all part of the IRL's wish to offer you great ways to fill your day beyond watching the main on-track action. It doesn't end there, either, because at every race weekend there are official autograph sessions with all the drivers, while track center passes are easy to come by, too.

And the mobile nature of the Fan Experience means that it's not limited to just circuits. In between events it's on the road, visiting other major events such as the X-Games and the Kentucky Derby. Then, as the next race draws near, you'll find the Fan Experience modules blanketing the area. It stops by at car dealerships, hot-rod cruises, city parks, national retail stores, local landmarks – even major-league baseball parks – and often with key drivers in tow. So just check out www.indyracing.com to get the latest info on where the Experience is going to be when the IndyCar Series comes to a town near you.

The IndyCar Series is all about the fans. The Fan Experience lets fans get up close with the cars, while drivers often go out and about during race weekends

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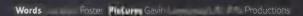
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# MOVING PICTURES

THE GUYS BEHIND THE TV COVERAGE OF THE YEAR'S INDYONG SERIES ARE GETTING PRETTY EXCITED, AND YOU SHOULD BE, TOU



The IndyCar Series' in-car cameras take you right into the heart of the action (above). For 2004, innovations include a camera that pans to both sides of a car (below)

hen it comes to putting the IRL IndyCar Series on TV, speed isn't the whole story. Sure, it's a big, exciting, intoxicating part of the story – as the in-car cameras putting you in the thick of the action breathtakingly testify. But the rest is about the characters, the emotions and the rivalries of the guys behind the wheel. Racing is about speed, but it's about people, too.

Buddy McAtee, vice president and executive producer of Indianapolis Motor Speedway Productions, the people tasked with putting the IndyCar Series inside your TV, knows this, and that's why he's getting so excited about what lies ahead in the 2004 season.

"We've sat down and really looked at what we do well and what we can do even better," he says. "We've brought in some great new people to produce and direct and we've got some exciting technological innovations, too. But this year, our number one mission is to really bring out the stories and the emotion of the racing – not just through technology, but by letting the fans get to know the drivers a little better and to care about them. We want the people watching on TV at home to be jumping out of their seats with the emotion and the excitement."

This story covers 16 chapters, from Florida in February to Texas in October, with an ensemble cast of the highest quality.

"The guys are all great drivers, that's a given," says McAtee. "But the great thing is that we've got such an interesting mix. We have the established stars, we have the young

guns, we have characters outside of the cars, like Michael Andretti. There are so many stories to follow and tell. How will the rookies fare? What's it like for Dan Wheldon to be in a situation where your teammates are, like, all superstars and you've got to deliver? How can Tony Kanaan and Helio Castroneves be such good friends off the track, then full-on rivals on it?

"I guess that with Gil de Ferran retiring, somebody's going to have to step up and be the really good guy, and I don't think we have a really heavy villain in the piece right now," he adds. "But what we want to do is let our TV audience get to know these drivers well enough to figure out for themselves who are the good guys and the bad guys."

Just as in racing itself, the technology covering the action is always moving forward. But McAtee doesn't include new tech for tech's sake. In the end, it has to be there to improve the visual involvement for the viewers and – back to that key mission – tell the story better.

"The first thing you must ask yourself for a TV race broadcast these days is, 'does it give the feel of the video game?'" he says. "If we get to that point *and* we convey the emotion, that's when you'll be out of your seat.

"In the past, we've had panning cameras mounted on the right side of the engine cowling, but this year we're introducing a camera on top of the car which angles 90 degrees to the right and 90 degrees to the left. We're also working on a visor cam so you're looking where the driver's looking, and a

## Watching world

This year, the IRL IndyCar Series will be broadcast in 180 different countries throughout the world. "In the past, we had about 60 to 90 covering all the races, with just over 180 taking the Indianapolis 500," says Buddy McAtee, vice president of IMS Productions. "In Japan alone there are now two broadcasters showing it, and the same for Brazil. Added to our U.S. TV package, this is really great news in building the series."



camera that looks at his face, and one that sits on the nose and gives a real feel for the speed.

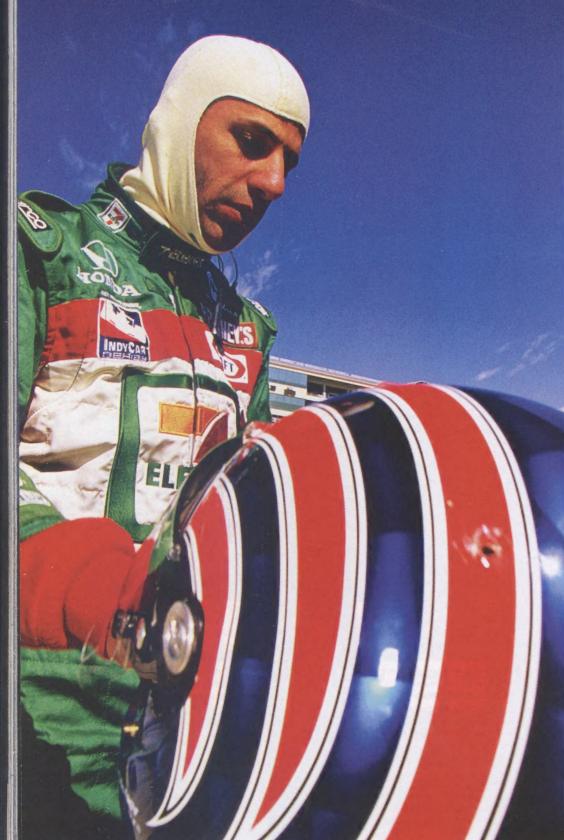
"How you convey the feeling of speed is very important, too. We're going to lower the track cameras and put in more robocams and track cams so you get more of an idea of the velocity and what it's like to be side by side and passing cars. Last year at Michigan, Kanaan passed seven cars in the first half lap, so we've got to be able to capture all that."

One innovation McAtee is particularly excited by is a tracking system that can show the identity of any car on the TV screen.

"We developed it all last year and got it working right at the Texas finale," he says. "We'll ramp up the number of cars we run it on as the season progresses, but basically you'll be able to see a driver's name and his portrait riding over his car, regardless of where he is in the race. It's another strand to getting the maximum enjoyment from watching a race."

But while he enthuses over the technology available to the director in the TV truck, McAtee knows the most important element in a live broadcast is making the right call on decisions that literally need to be made at 200mph.

"Having the right director and producer, working with excellent spotters, and getting the right information from race control are all crucial," he says. "If we decide to follow the wrong car with two laps to go, it doesn't matter how many special effects or in-car cameras we have. But I'm excited, because I know we've got the right people to make the right calls. I can't wait to get started."



# 5 minutes

When was your first-ever car race?

In 1991. It was a Formula Ford race at Interlagos in Brazil.

What was your first ambition in motor racing?

Just to become a big-time racing driver.

What's your ambition now?

To win the Indianapolis 500 and an IRL IndyCar Series championship.

What's in your CD player at the moment? It's on Coldplay right now. Their first one, Parachutes.

What's in your DVD player?

Actually, I've been watching a DVD of the Cirque du Soleil (a Canadian circus) - I'd love to see it live.

Favorite movie?

Castaway with Tom Hanks.

Favorite place?

Gold Coast, Australia.

If you weren't a racing driver, what would you want to be?

A triathlete.

What's your second favorite sport? Road cycling.

What's your best moment in racing?

I would say getting the chance to race against great drivers like Alex Zanardi, Michael Andretti, Bobby Rahal. They're big names, and when I grew up I wanted to be like them. And then one day I was racing against them and trying to beat them. That was a fantastic feeling.

What's your preference, racing or qualifying?

Definitely qualifying. Having to do that one lap at your very best, being really precise -I love to do that.

Favorite track?

nose, and a joker.

Interlagos.

Who's your hero in motor racing?

Ayrton Senna, the greatest Brazilian driver. Hero in life?

I've had a few over the years, but mainly my dad, who's no longer alive, and Lance Armstrong, the cyclist.

Finally, sum yourself up in five words? Funny, but serious at the same time. Err, big No matter where you're racing off to next week, there's a better way to get there.



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